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VOL. 35 NO. 1

CLAY RECORD

A JOURNAL DEVOTED TO
THE DISSEMINATION
OF ALL MATTERS
PERTAINING
— TO THE —
CLAY
— INDUSTRY —

July 15, 1909

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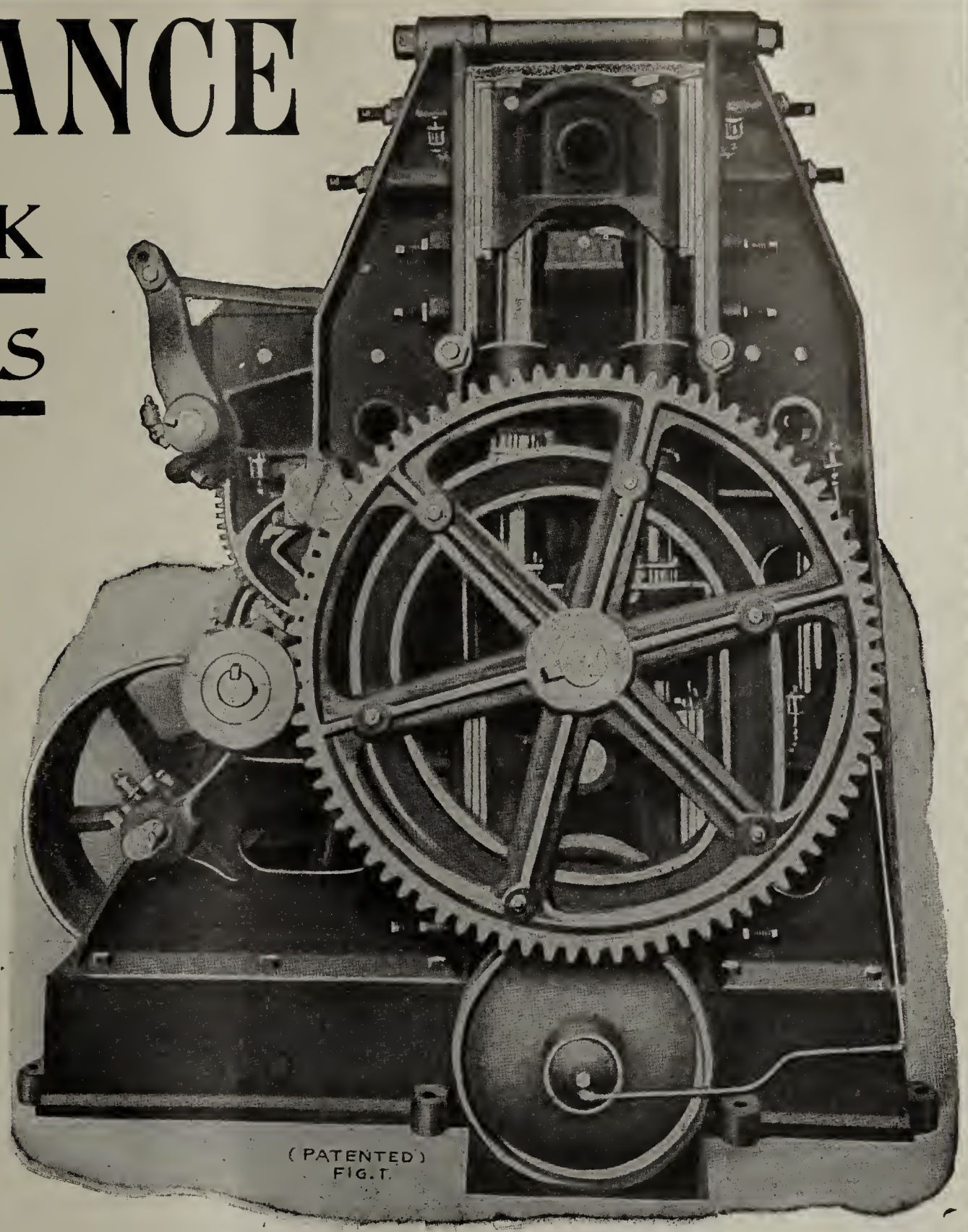

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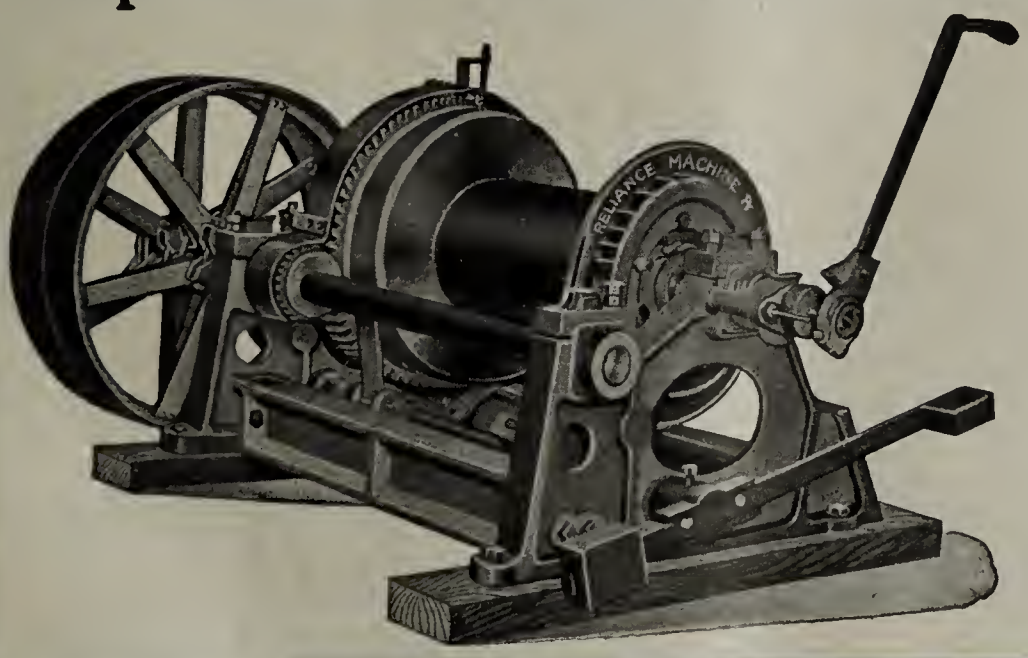

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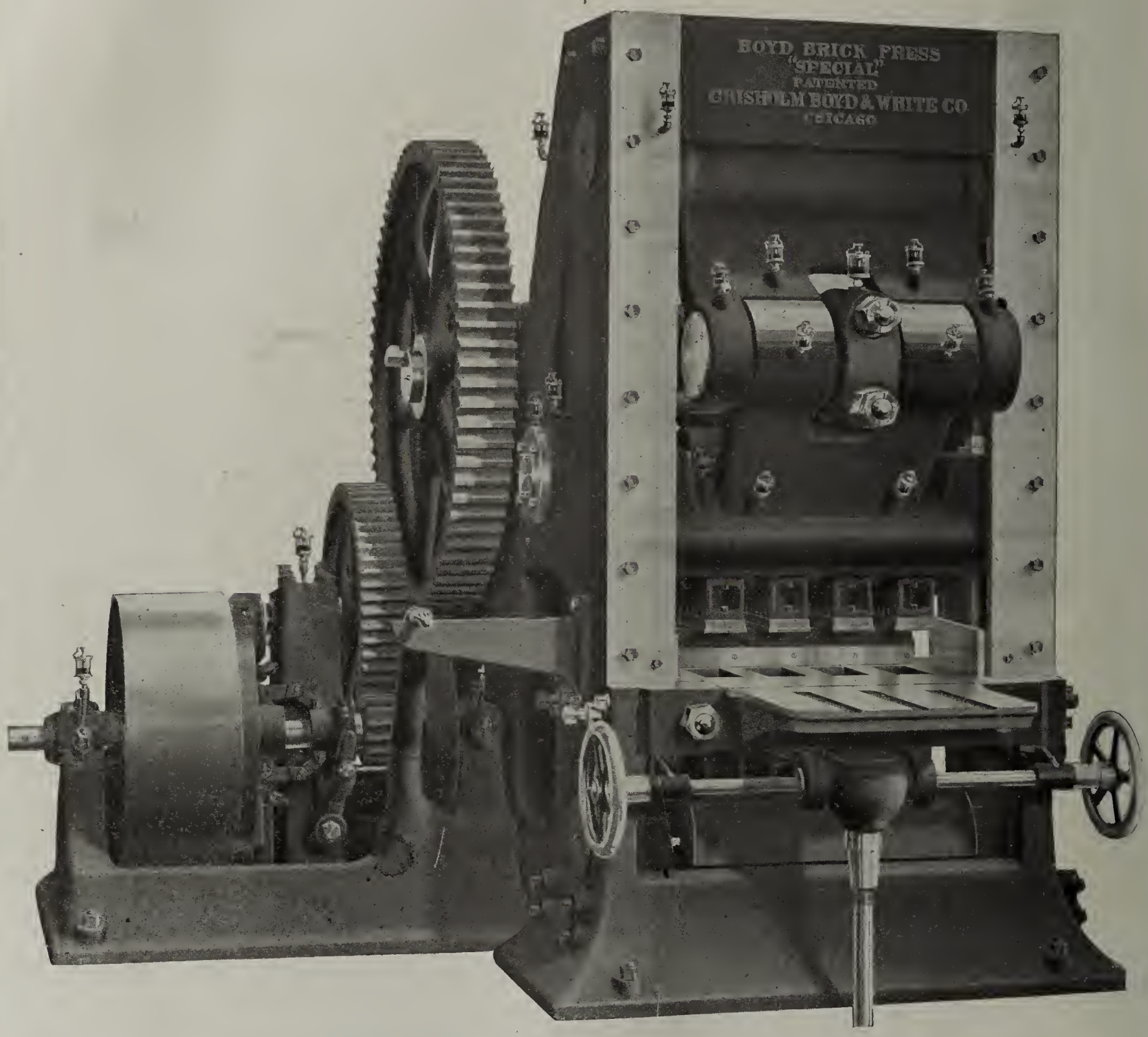

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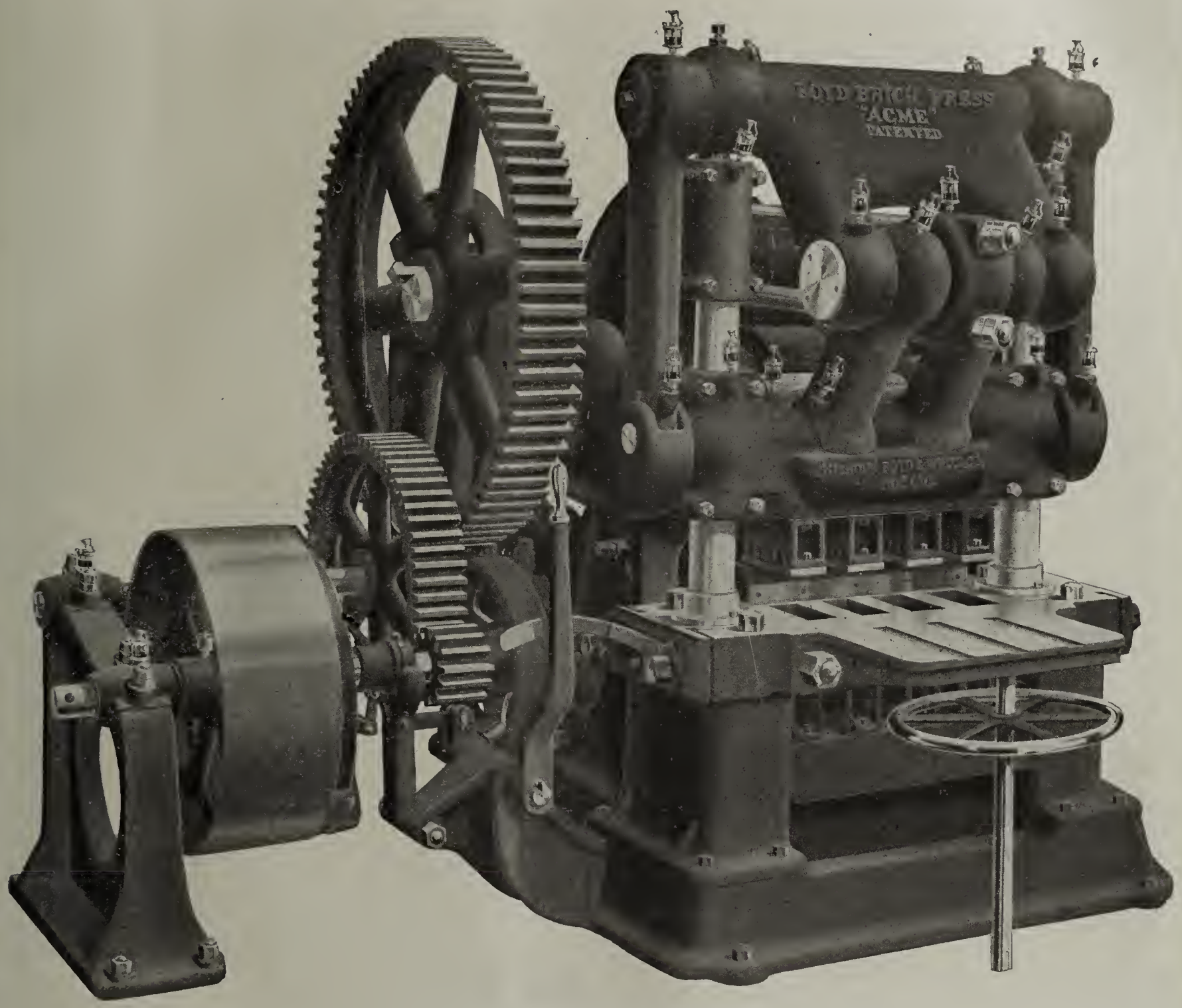

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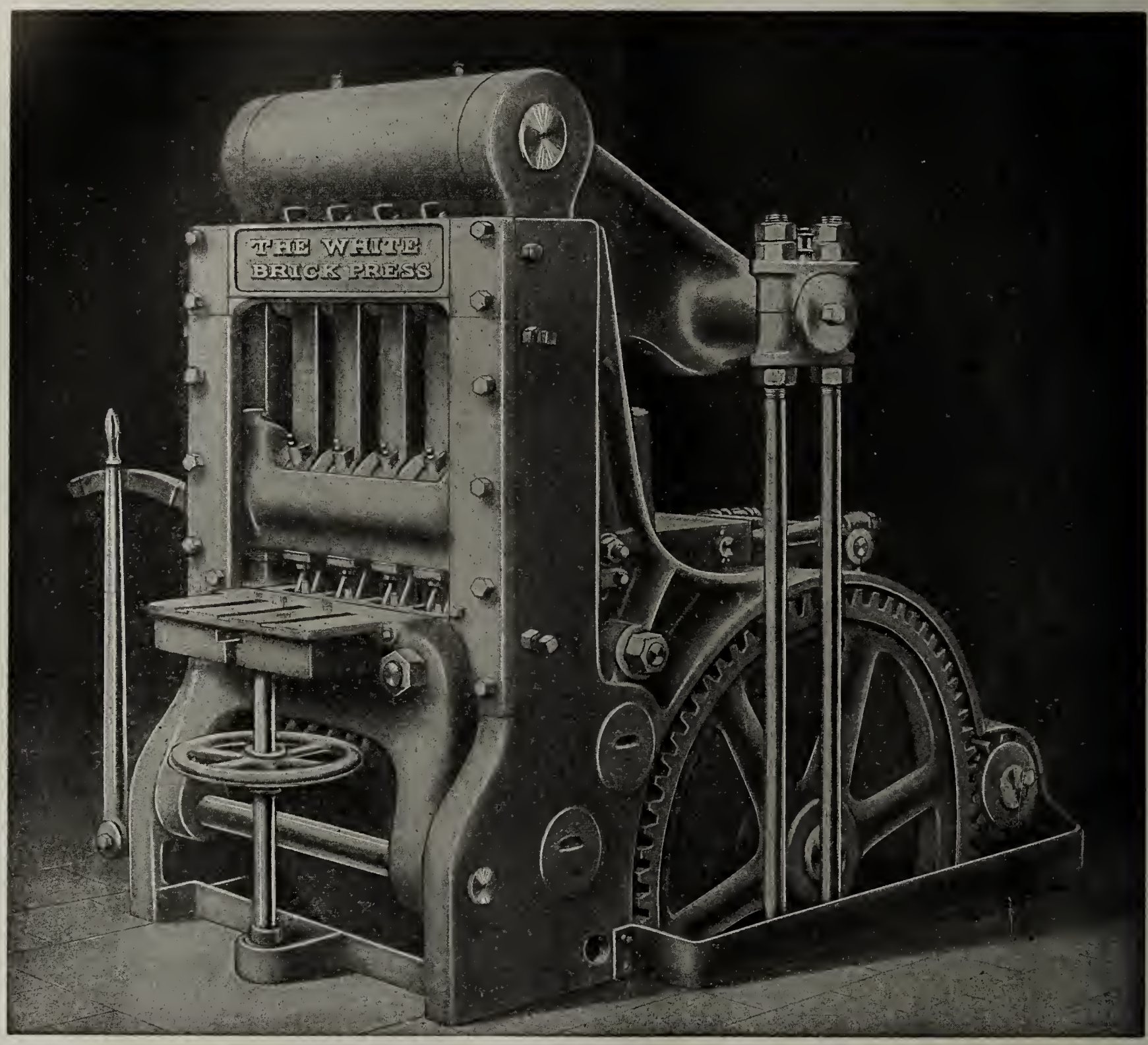

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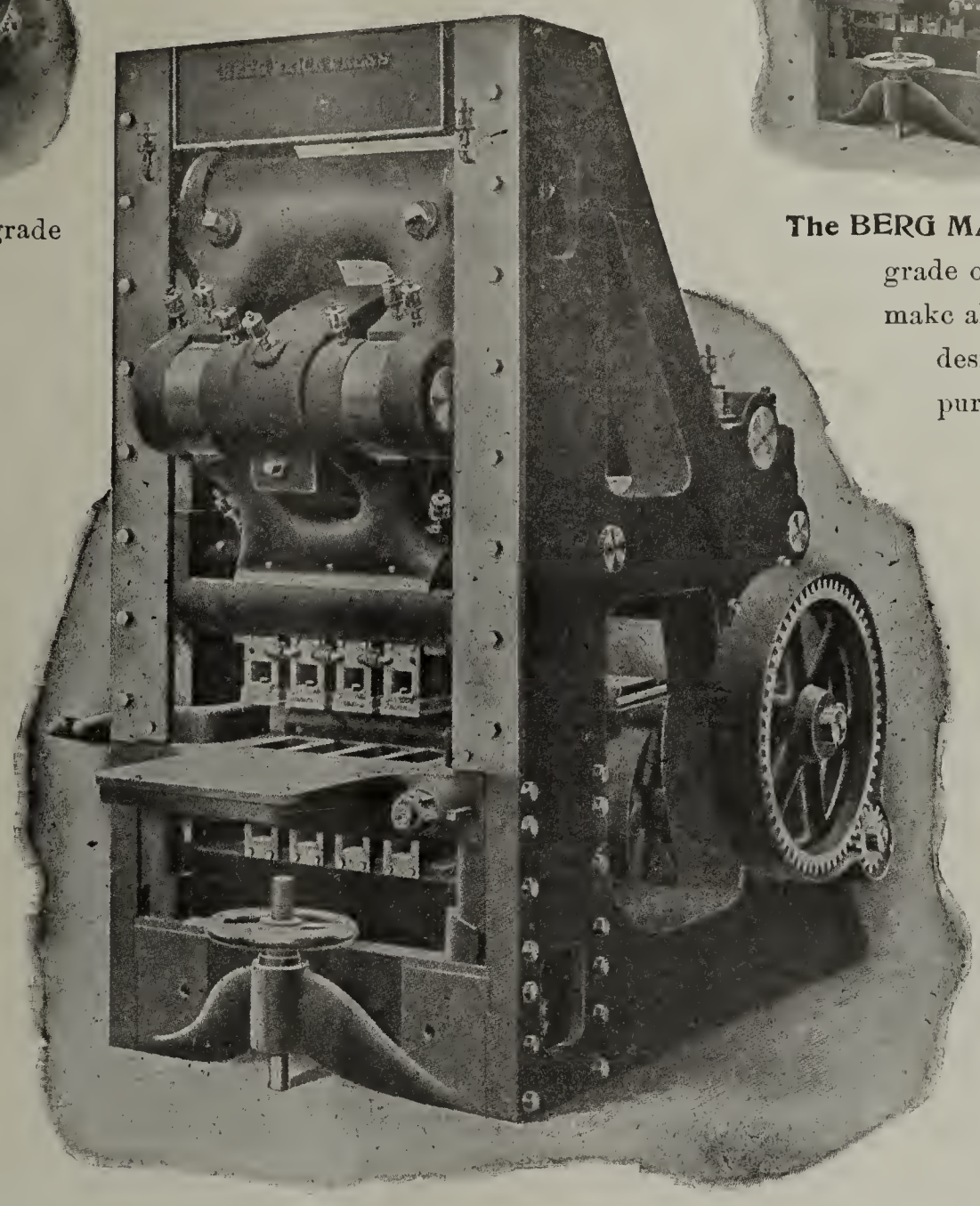

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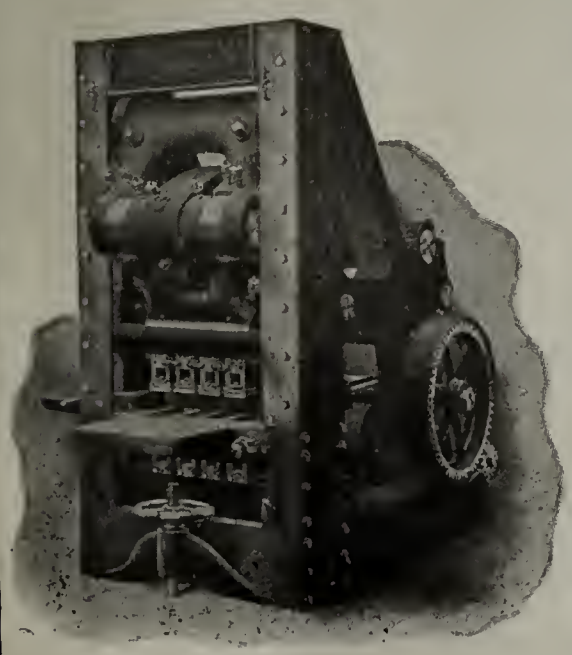

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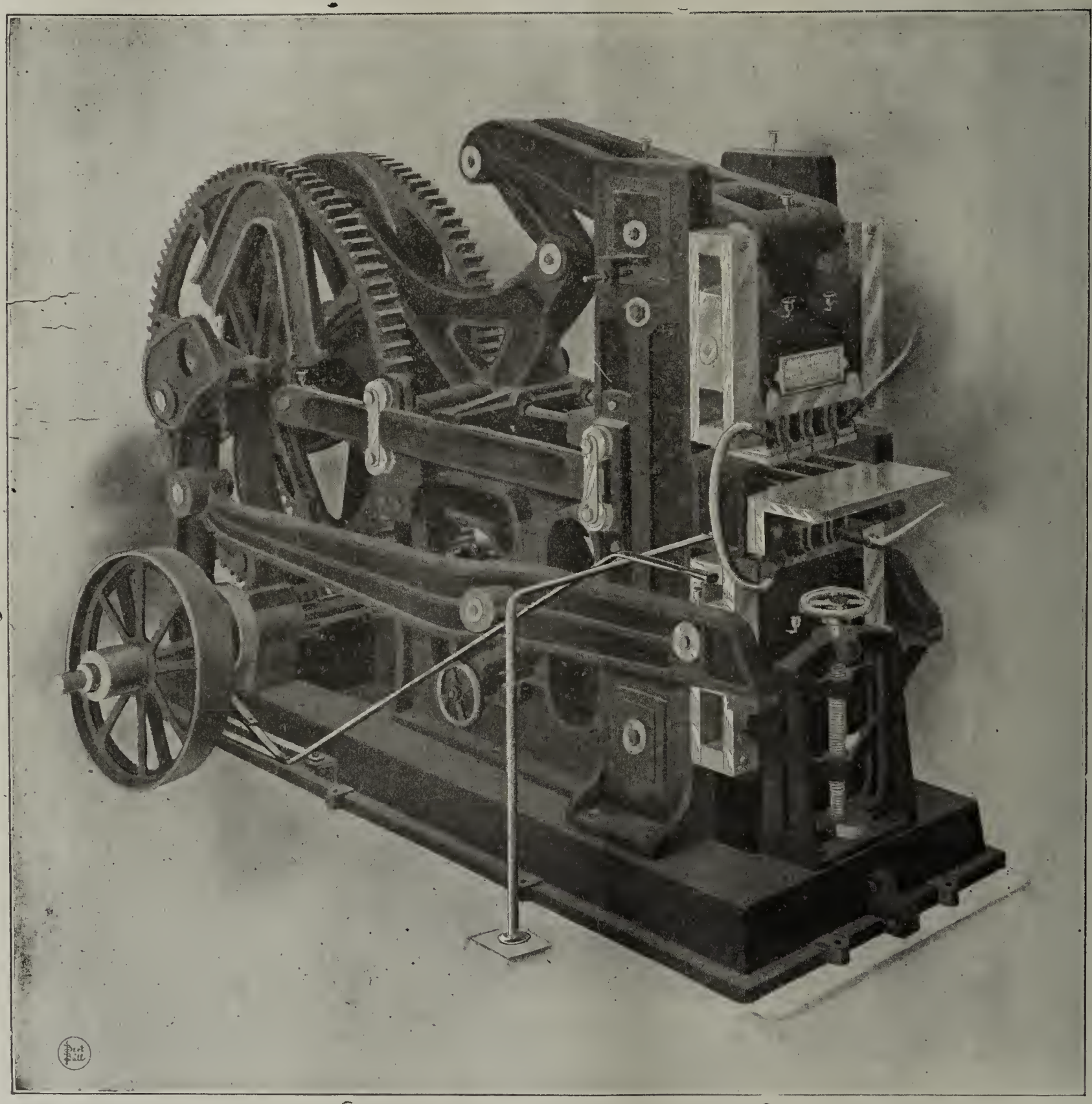

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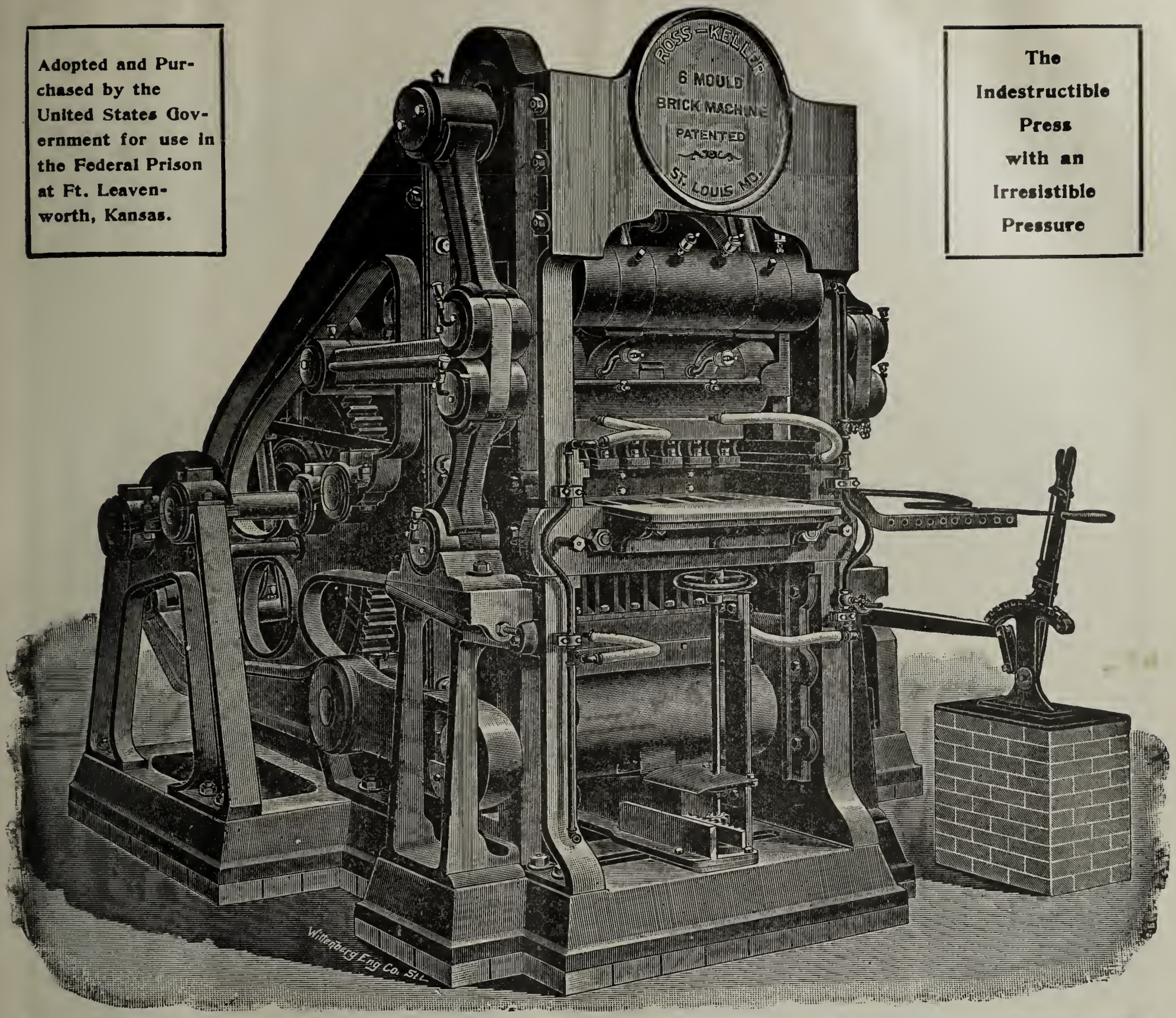

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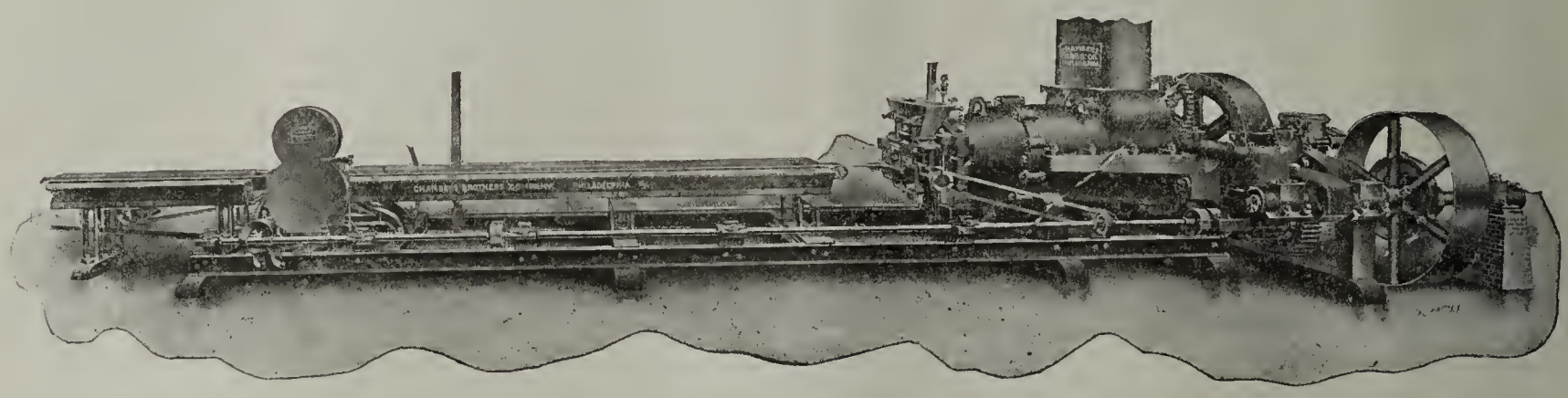

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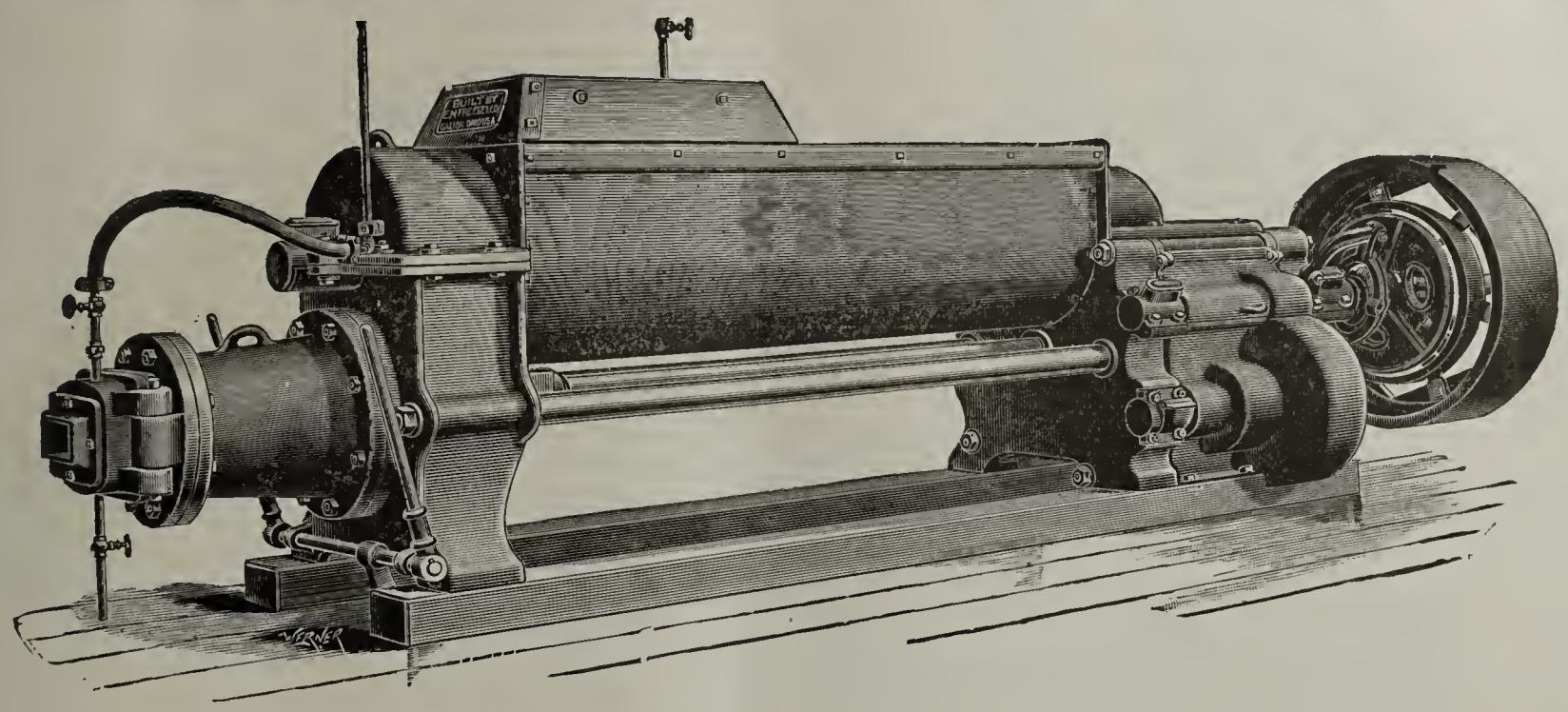

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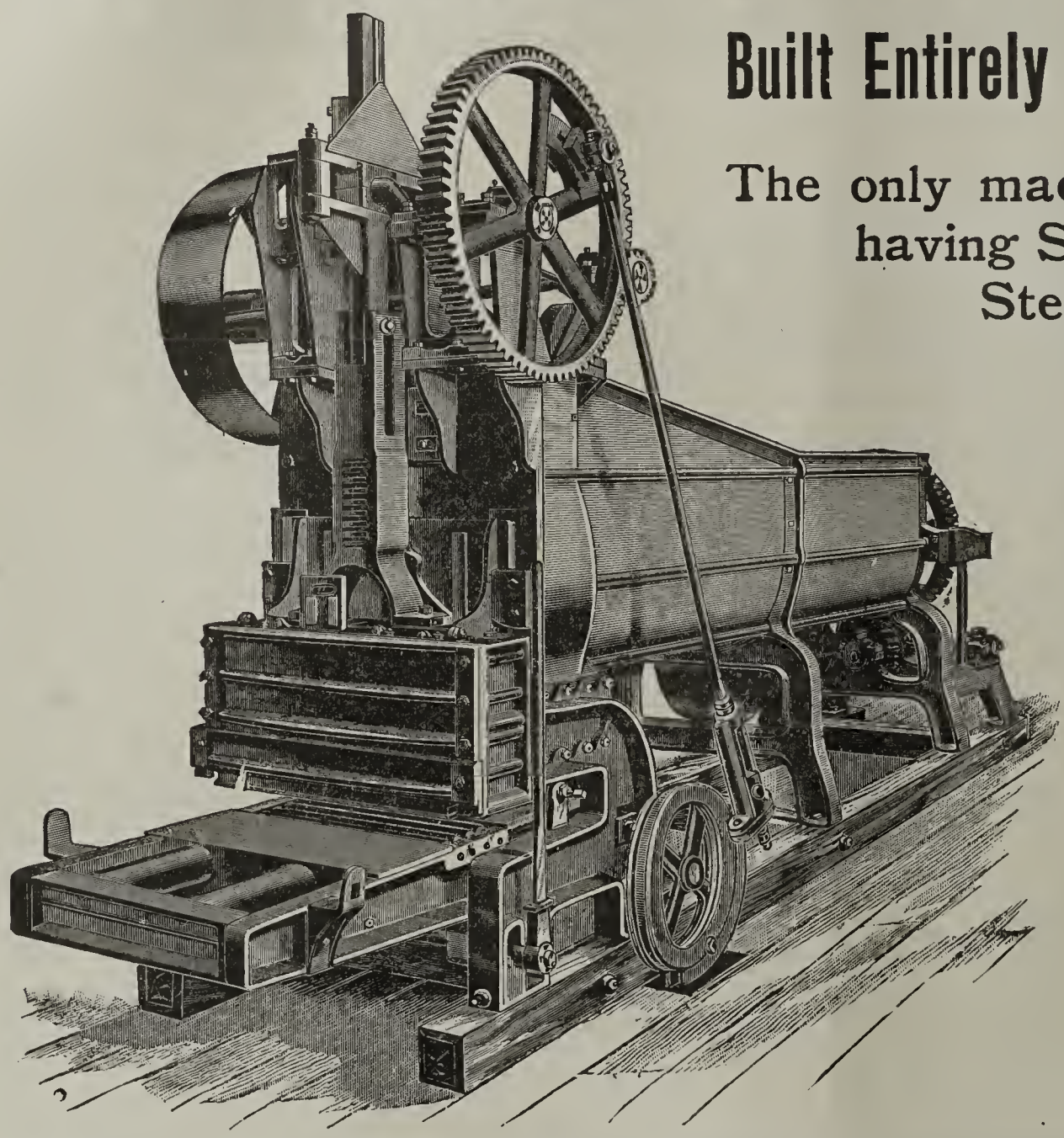

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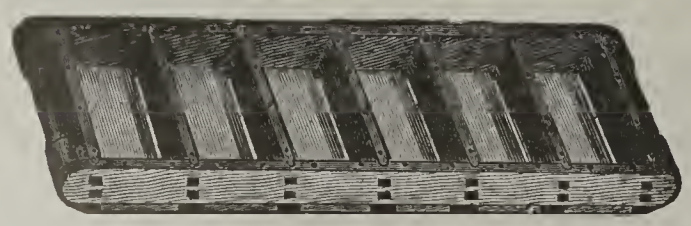

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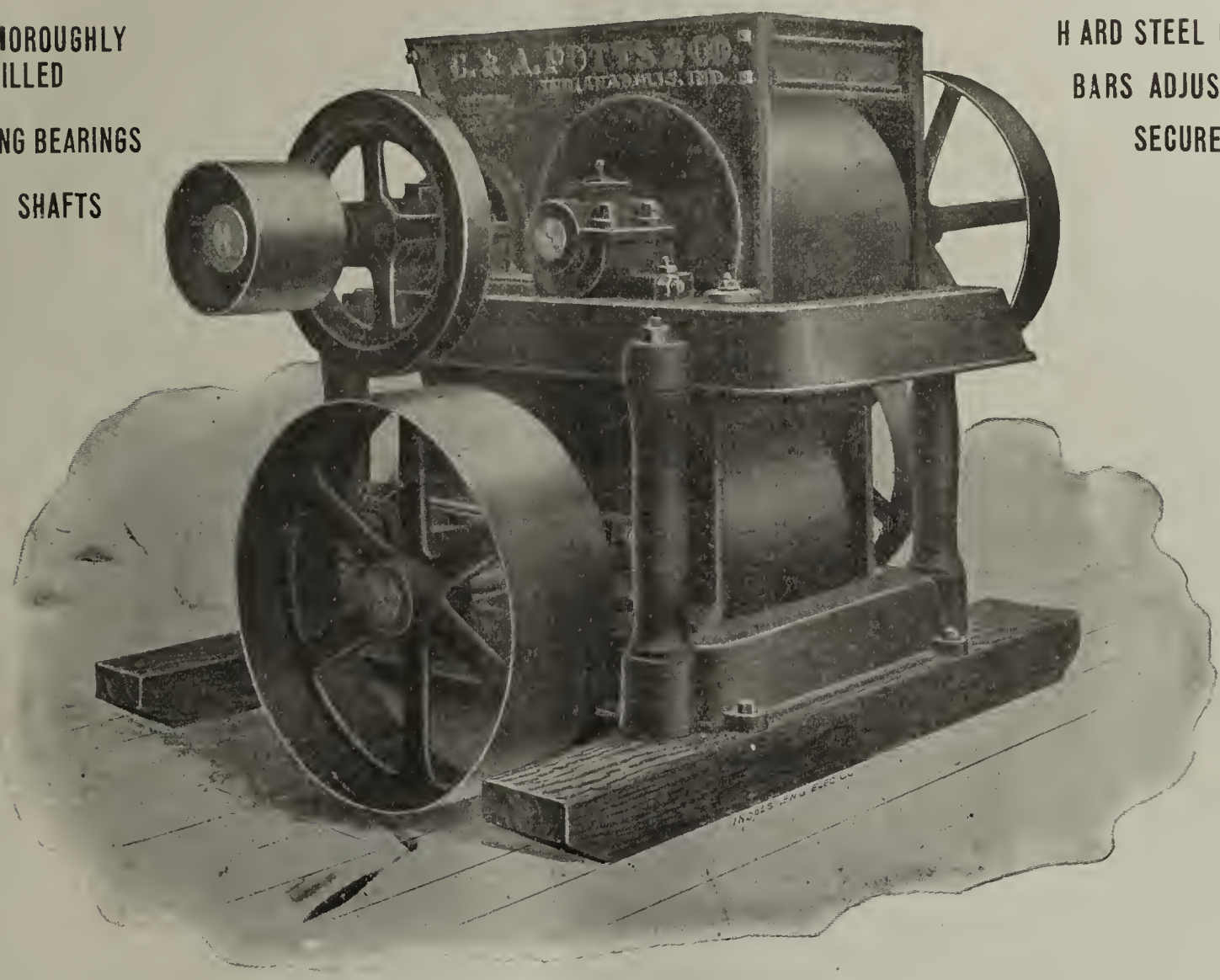

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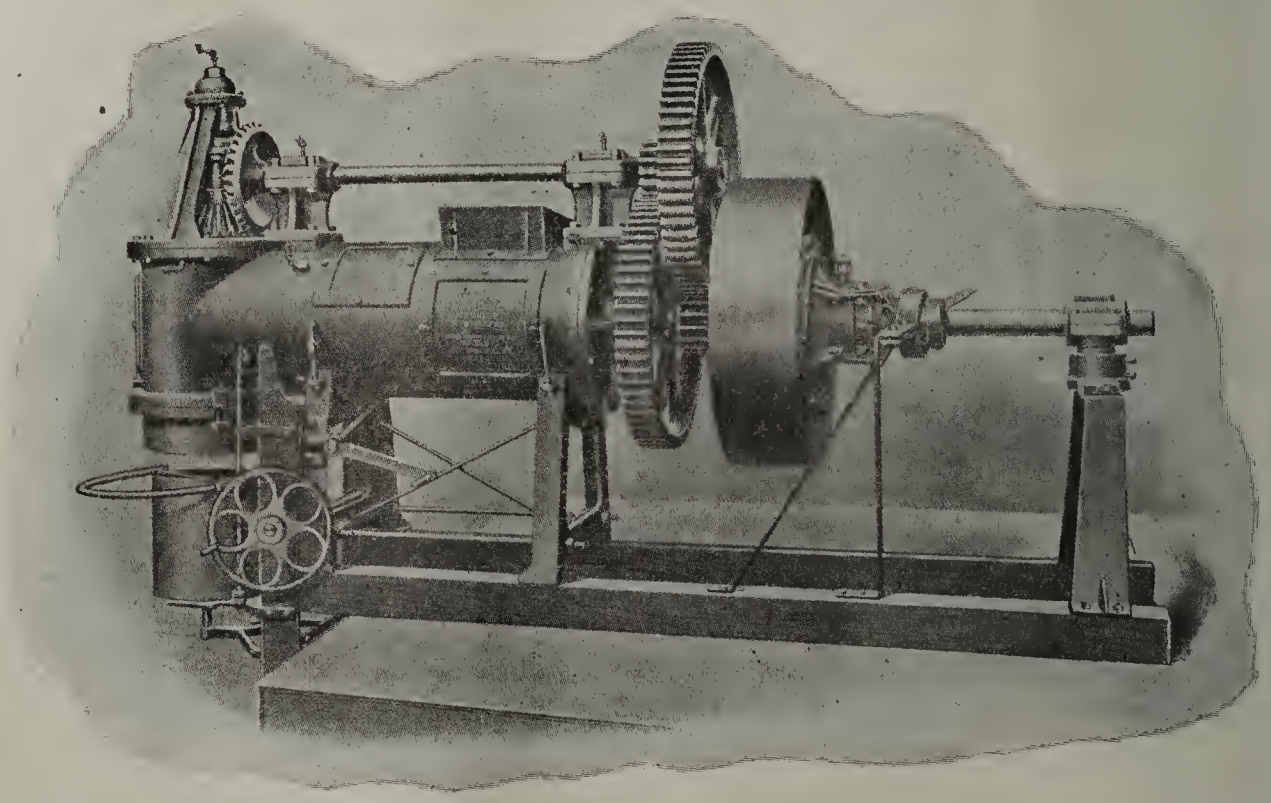

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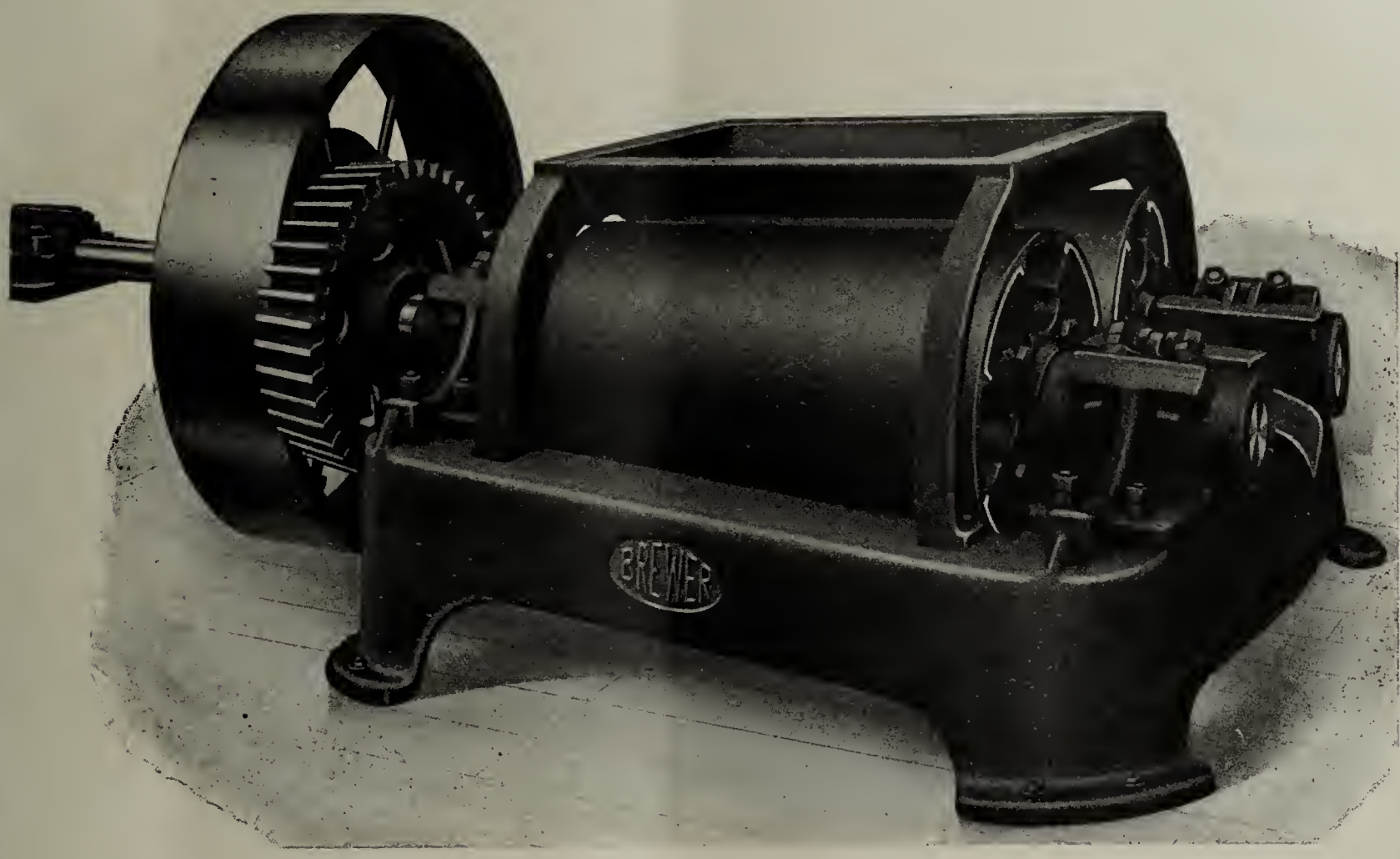

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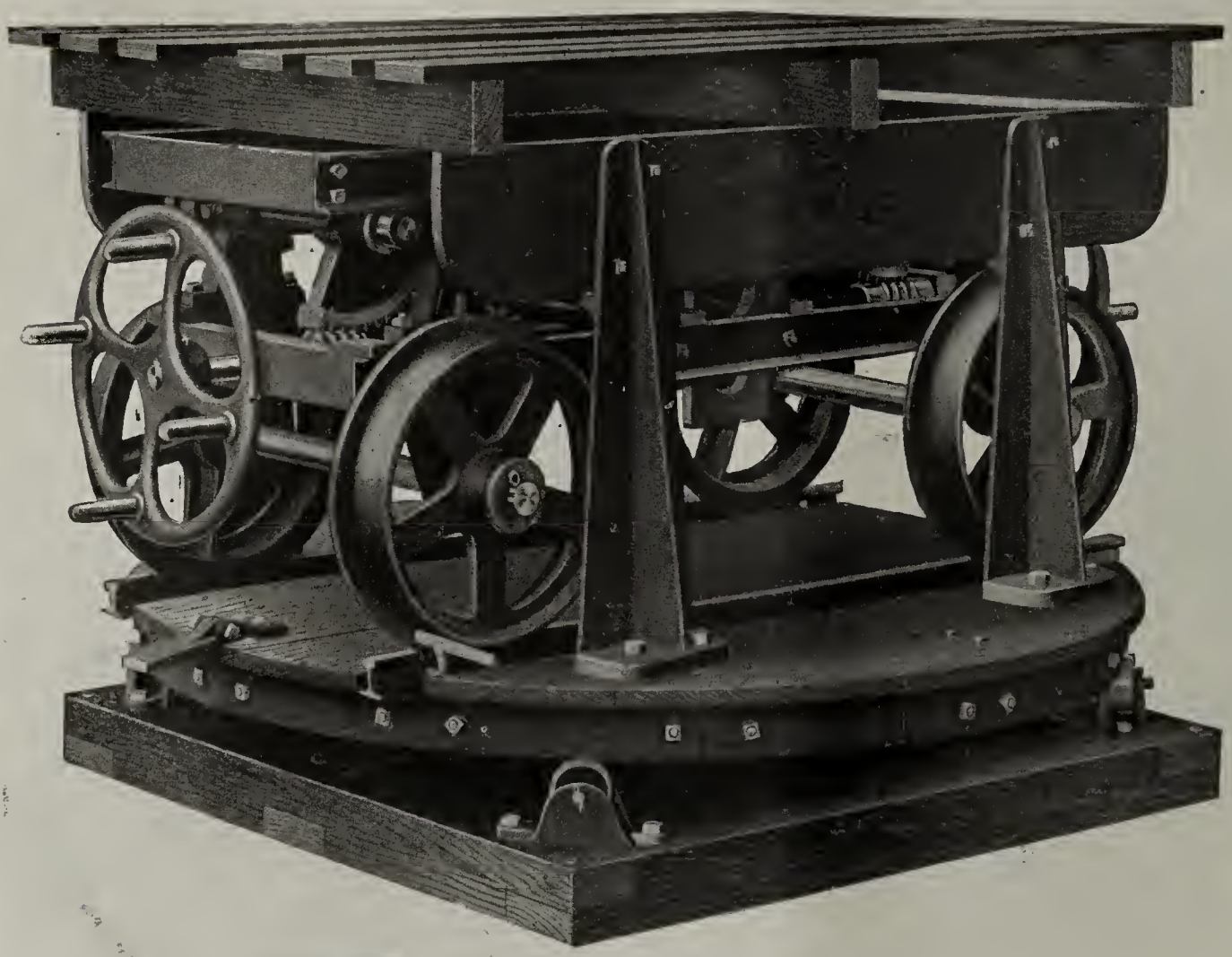

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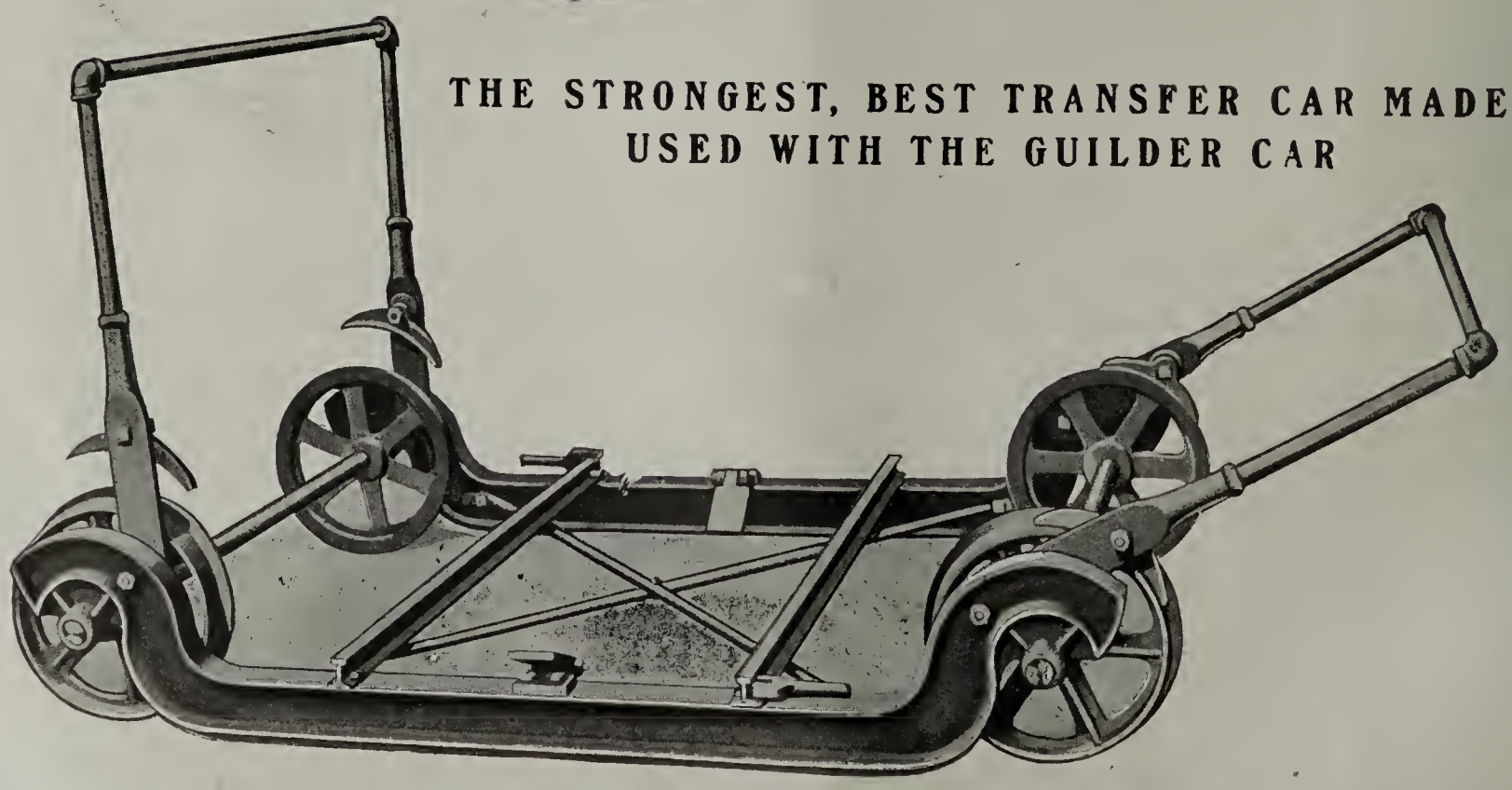

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CLAY RECORD

Entered as Second-Class Matter January 25, 1893, at the Post Office at Chicago Ill., under Act of March 3, 1879

Vol. XXXV. No. 1. CHICAGO, JULY 15, 1909 Semi-Monthly, $1.00 per Year
Single Copies, - 10 Cents

AIR UNDER PRESSURE AS COMPARED WITH NATURAL DRAFT: HOW IT APPLIES TO BRICK KILNS.*

By John C. Boss, Elkhart, Ind.

Among the various opportunities which have come to the writer to prepare papers to be read at conventions and for publication, this is one of the first invitations I have ever made bold to accept. I feel there are good reasons for my not having accepted such invitations in the past, being only a common, country brick-maker and reared as such, and never being able to enjoy the opportunities of a technical training along some of the established lines.

These facts being true, and coupled with the further fact that usually at such gatherings the foremost talent of the land is present to present for your consideration the more advanced thoughts pertaining to the art in which you are engaged (and to a striking degree is this talent present here on this occasion), well might one shrink from the responsibility of daring to present a paper along a given definite line when in fact, it should be the reverse in that I should be here to receive rather than give instructions. In explanation would state that the reason I am here today is to give you a comparative word description of the art of using air under pressure in the burning of brick as compared with that of the old conventional way of natural draft, or free air.

I have noticed with a great deal of interest the discussions and exchange of ideas that have taken place between the brick-makers of your state, as to what means could be employed to overcome the manifest difficulty of securing a substitute for wood.

It is plain that where brick-makers have always had access to wood for at least water-smoking their brick, then this very convenient fuel is abruptly cut off, brick-makers are rather at a loss to know, at the moment, how to overcome the difficulty; and I have observed the use of coke has been urged upon you for the reason that it could be employed in the same capacity as wood (that is, it will produce a nice, clean fire the same as wood).

I am convinced that when I explain to you how air under pressure can be employed and by means of which it will be possible to utilize the poorest, cheapest grades of coal slack, or screenings, and produce a water-smoking fire that will challenge wood as to its clean, hasty, water-smoking effect, it will at once be plain to you that unless I had had sufficient previous experience to know whereof I speak, I certainly would not have the boldness to come in your midst to present this idea as I do.

* Read at the last meeting of the Wisconsin Clay Manufacturers Association.

Singular as it may appear to the average brick-maker who has not been brought in direct contact with this proposition, a coal slack fire with air under pressure, properly applied, will not only water-smoke your brick kiln equally as good as a wood fire, but it will accomplish this result successfully in less time. By the peculiar application which is made the soot and smoke, which would otherwise be prevalent in a green brick kiln with an ordinary coal fire with natural draft, is entirely consumed by the use of air under pressure and again, singlar as it may seem, a brick kiln that will not show any appreciable draft with a wood fire for at least from twelve to twenty-four hours the old way, will at once assume an air of activity when a coal slack fire with air under pressure is employed.

You will bear me out in the statement that the old way of burning a brick kiln usually during the early period does not produce any sort of active water-smoking conditions and a brick kiln that is being water-smoked is not so much in need of fire as it is in need of dry, superheated air. The principle the writer desires to bring to your notice at this time is that, owing to the general nature of a green kiln, the old style fire will not become active and produce an effective result unless it becomes unmanageable and beyond control, which, in fact, finally gives off too much heat or else not enough.

By using air under pressure the minutest or smallest fire can be maintained, but, small or large, the fire is constantly of a penetrating kind and character. The fire is such that it will consume all of the gases and no carbon or gases are thus permitted to enter into the brick kiln in an unburned or unconsumed state. To meet this condition we arrange a small opening underneath the fire door which, during the water-smoking period, admits free air. Each fire-box is similarly equipped. The fire-doors on the brick kiln are kept constantly closed, from the time the fire is started until the kiln is burned. During the water-smoking period this small hole underneath the fire door is allowed to remain open and immediately back of the hole on the inside we maintain a sharp fire sufficient in size to meet the water-smoking conditions of the clay. This fire is not allowed to go into the kiln untempered, nor is any air admitted into the kiln untempered.

The air entering through this small opening enters with a rush over the surface of the sharp fire and a constant even temperature of superheated air is flowing into the brick kiln with the attendant result that a stimulated action is at once produced and maintained until the kiln is thoroughly water-smoked.

165118

From the foregoing description you will readily see that if there is any difference between the various fuels for water-smoking, that the coal slack fire, with air under pressure, has a decided advantage over other fuels, with free air.

When the brick-kiln is thoroughly water-smoked, we close this small opening under the door, as the brick-kiln from now on is not so much in need of superheated air as it is in need of fire, and air entering over the top of the fire would tend to kill or reduce its effect or action, so that from now on the kiln is supplied with a gradual flow of blaze and heat in accordance with its needs.

At this stage we now enter upon the period of raising the heat in the kiln which, with the old way of burning, is usually a very difficult one. The fire does not at once become active and sharp as when we use air under pressure, and having to bring free air into the kiln from the outside, the side of the kiln from which the wind blows tends in a most serious manner to disturb the heat conditions within the kiln and this heat disturbance constantly taking place, it is manifestly impossible to burn as good a kiln as though the heat were allowed to travel unmolested and undisturbed through the kiln to its completion.

For a long term of years I have been laboring hard to educate myself as well as the brick-making public on the principle of why it is possible to produce a brick-burning heat in a brick kiln. A large majority of our most accomplished and able brick-makers who have battled with this question for a long term of years; men who, for the most part, are able to produce a high percentage of well-burned brick kilns, constantly go through a certain fixed process of consuming fuel and burning brick and yet utterly lack the proper knowledge of why good results are accomplished, on the other hand, when failures are had, the reason for such failures.

If you will bear with me for a moment, I would like in the most brief manner possible to present to you gentlemen at least the ground foundation plan or fundamental reason why brick will burn, how the heat is produced, and how it transpires that failures are had. The principle involves two different ideas; one is the reason why heat travels through the kiln and is absorbed by the brick, which is quite generally known and understood by the brick-makers as capillary attraction. This is a God-given element placed in the clay by direct intent so that when the first brick next the fire becomes filled with heat, it through this inherent element conveys the heat to the next brick to it. So much for the reason why heat will travel in brick-kilns.

Now as to the heat wave and the important part it plays in the production of heat and the burning of the brick. It is plain that from some source heat is derived which produces a chemical change in the brick and it is likewise true, and most of you in my hearing today have had the experience that certain kilns would finally require from one-third to one-half more fuel than some previous kilns, and it is this heat wave which, when forced to travel in an even uniform tenure through the kiln, as it travels from one brick to the next, in burning out a certain inherent element in the clay, adds to and aids in producing an additional brick burning heat.

The fraternity at large does not consider in sufficient measure the all-important feature here referred to. We sometimes term this heat, or classify it, as a wave of heat, and at least calculation from 50 per cent to 60 per cent of the heat in your brick-kiln is produced through the instrumentality of this heat wave. In other words, if the heat wave is dissipated, it is never again possible to permanently and effectively re-establish it without enormous fuel loss and to the permanent detriment of an otherwise first class, well burned kiln of brick.

This brings us to the all-absorbing principle of how and why it is possible to control this virgin wave of heat which never starts to establish itself until the brick is past the red heat stage, and this heat wave forms the fundamental principle or process of brick burning. It contains a supposed mysterious, potential power with which every brick-maker should be thoroughly conversant. Now please understand me correctly. What I mean to convey is, that brick burners who will conceive the proper idea and thoroughly analyze this heat wave condition will, in the most successful manner be able to produce a larger percentage of first class kilns of brick than otherwise successful brick burners who do not understand this heat wave principle.

We will assume that the brick-kiln has come to the stage or period when the heat wave is fully established, fed and nursed by an artificial fire. This heat wave is, for the most part, not to exceed 3′ thick and embodys and embraces not only the fundamental brick burning principle, but within its zone is where all the actual brick burning changes take place.

If this argument be true and the principle correct, it should not be necessary for me to point out the essential features or the absolute importance of maintaining this heat wave. In order that you may understand more fully, it is well that you have the correct idea to the effect that the heat wave travels not only in the form of a wave, as described, but it travels under very heavy pressure, in fact, an appreciable, measurable pressure, and at the slightest provocation the tendency is to dissipate itself. If for any reason it is allowed to become dissipated, or broken, it creates within the kiln what is termed, or what we are sometimes pleased to call, "wild-fire." It acts flighty, has no known positive course of travel, no positive execution or work to perform.

Now as to the method of maintaining this heat wave: The active principle involved is a very simple one. First, it is absolutely necessary that a given and known quantity of oxygen and air should enter into each and every firebox without interruption. With the Boss System the kiln is kept air tight from the outside, the fire doors never opened except for firing purposes and the wind may blow a heavy gale from start to finish and have absolutely no effect whatever on the heat conditions in the kiln, for the reason that the air is supplied to your kilns from underneath and under pressure, and the flow of air or oxygen is constant, the fire never becomes clogged or choked, and as a result the heat wave is allowed to travel uninterruptedly through the kiln which results in a first class good uniform burn.

In most instances, in the absence of a well burned kiln, the trouble is ascribed to the lack of proper fuel when, in fact, the fuel conditions have no bearing on the situation whatever, and the sooner brick-makers come to understand this heat wave principle, and its far reaching effect, the better it will be for them for the loss of this heat wave forms the foundation of most of the difficulties in burning which confront brick-makers today.

In trying to describe to you the great importance that attaches to this heat wave, I am impressed with another thought. It may appear to you as unworthy of mention, but in order to make the individual brick burners here present understand the importance of the heat wave and brick kiln action, I have often termed the brick burner's lack of understanding that of his inability to understand "brick kiln language." I firmly contend that brick kilns possess the ability to speak and talk to the brick burner as intelligently as any of the gentlemen in my hearing today are able to converse with one another, and it is too often the case that brick burners are too much given to firing

their kilns by the watch, or at stated intervals, whether the kiln is ready for the fire or not, and the needs of the brick kiln are entirely ignored. Brick kilns often beg for certain changes in the conducting of the burning process, and in too many instances we take a diametrical course to that which the brick kiln actually requires. No brick burner is capable of laying claim to being a successful brick burner unless this "brick kiln language" is given the most careful thought and he proves his ability to master it.

In many instances where the heat wave is dissipated or allowed to become lost, another detrimental result follows: The heat will then run in pockets, become unbalanced, and produces in an up-draft kiln what is commonly known as "cold spots." "Cold spots" have been attributed to a great many different sources and considered to be of a freakish character; and while a great many of our brick-makers have been able in a measure, to overcome this difficulty and trouble, yet the real principle of why the "cold spots" come is never properly understood, all of which can be directly attributed to the loss of this heat wave.

There are two different sources from which cold spots may be had in brick kilns. One is, a choking of the kiln from soot. This first effect is entirely eliminated by the use of the Boss System of burning.

The second is a cold spot effect that is produced by the loss of the heat wave. The heat wave, in this case, having become dissipated the heat run up in "pockets," and the part of the kiln on top to which the heat did not go is the part that usually gets cold.

Another feature of trouble that comes from the loss of this heat wave is cracks in a brick kiln, which forms what is commonly known as the careening of kilns. The clay journals at various intervals have published long articles on why brick kilns careen. The reason, however, has not yet been attributed to the proper source, and the careening of brick kilns is entirely attributable to the loss of this heat wave, for the following reason:

If the heat wave is dissipated it will seek for avenues of escape, and if this situation is allowed to become serious it will never again be possible to re-form the heat wave on an evenly balanced basis.

In some instances, especially when the wind is blowing hard from any given direction, and for a long period of time strikes the kiln on one side, the wind blowing into the open ash pits, as is the case with the old style firing, it will have a tendency to disturb and destroy the heat wave, causing it to rise faster on the opposite side from which the wind is blowing and settle the kiln in a shorter space of time than on the windward side.

Under such circumstances the heat will either go too rapidly to the middle or, to the contrary, it will all go to the heads. In the first instance, if it goes to the middle, the kiln will settle at that point, forming large cracks a distance away from and along the high places. If the heat wave perchance goes to the heads and avoids the middle, the kiln will settle along the heads, leaving a high place in the center and along this dividing line will form heavy cracks, and in such instances the careening of the kiln will be very serious.

On the other hand, if a kiln is kept air tight from the outside, which results in the heat wave not being disturbed and allowed to travel evenly throughout the entire kiln, it will not careen nor will it form cracks. With the Boss System it is absolutely impossible to encounter these difficulties, as by the old method of burning in up-draft kilns.

In dealing with cracked or checked brick, we will again go back to the water-smoking period: our desire is to show you that a water-smoking fire, with air under pressure, is a very decided advantage enabling you to water-smoke the brick readily without injury from cracks and checks. This damage to brick, with the same fire application, varies as to the nature of the clay, whether it is of a rich and silky character, or otherwise. We occasionally find some clay and shale that is coarse grained which, with the most flagrant abuse, the brick will still remain intact and firm and show no damage.

When fire is started in a brick kiln the brick will immediately begin to go through a sweating process which brick-makers term water-smoking. This sweating process immediately compels the brick to become larger on account of the moisture that is produced and emitted from the brick. Take for illustration new mown hay; it is allowed to remain in the field until it is dry and thoroughly cured, at least apparently so, but when the hay in this dry state or condition is placed in the barn, or haymow, a sweating process immediately begins which is absolutely identical with that of the sweating process which takes place in the early periods in the firing of a brick kiln, and it is only after the sweating process has been completed that the brick are dry from a standpoint of actual water—moisture.

The process of carrying off this moisture when it is started immediately begins to increase the size of the outside of the brick, in carrying them through this sweating process, will become large until thoroughly dried and when the outside of the brick does become dry it shrinks to its final last state. The damage lies in hastening the process too rapidly; the outside will become dry and baked before the moisture has all escaped clear to the center, and under these circumstances you will readily see that when the brick is increased in size too rapidly by means of the produced dampness, if care is not exercised it will tend to break the texture of the brick, separating the outer formation from the core.

When the brick are completely dry, the fracture may be closed so effectually that it will not be visible to the naked eye, though in many instances it may be visible. In either case, however, the brick will be batty and not show firm and strong. This process of cracking the brick or breaking the texture of it is fourfold, or in other words, the damage can be done at four different periods.

We will now assume that the water-smoking period was completed without injury to the brick; when you begin to raise the heat in the kiln they again begin to swell. In other words, heat swells brick and enlarges them the same as moisture. This enlarging process continues until the brick is thoroughly soaked and filled with heat to the center. If the heat raising process is applied too quickly, the outer shell of the brick will become enlarged and will, at the same time, create a fracture or break between the outer part of the brick and the core, and when the center of the brick finally becomes heated, it will open up at almost the same period when the outer part of the brick would like to shrink and contract, thus doing irreparable injury to the brick.

As to the last danger point. We now come to where we are preparing to settle or shrink the brick, causing it to assume its final shape.

If the settling process is hastened too rapidly there is great danger of shrinking the outside shell of the brick and not permitting the settling process to take its regular course and allow the core to settle at the same time the outside of the brick settles or shrinks. In other words, a brick that is properly settled should begin the shrinking process in the center, or core, of the brick, and this is absolutely impossible unless the settling heat has penetrated to the center of the brick to equal intensity as that of the outside and too much haste in either of these fundamental changes is injurious to the brick.

This again brings us in direct contact with the heat wave, as follows: If the heat wave is conducted through the kiln in an orderly manner, its tendency is not to travel faster

than the ability and power the clay possesses to shape itself and assume the various chemical changes. The reason for this is that since these elements are of a God-given character, we always find that God's ways are orderly and will not produce any counter-irritant, unnatural, unfinished effects, but to the contrary the final completion will not only be orderly but the results will always be that of a perfect product.

However, there is one more factor entering into the question of successful burning with coal, or coal slack, and that is the proper width of kilns. In the early brick-making periods in the United States when timber was so plentiful and the quality of brick little considered, it was deemed economy to have wide kilns and, under the circumstances it was quite possible to burn the wide kilns and secure material that was usually marketable; but as time progressed and wood became scarce and the public educated to the fact that poorly burned brick were unnecessary, the argument for narrow kilns became a powerful factor, especially when an attempt is made to burn brick with an all coal fire, and even at that to employ the cheapest grades of coal slack, or screenings.

It may be said to the credit of at least some of the brick-makers that they are beginning to realize the error of the primitive way of doing, and of late we do find some who will concede to make their kilns narrower, which is an absolute necessity for good brick burning.

Respecting the effervescence or whitewash on brick walls, it is plain that many of our best brick men, in many instances, do not understand the source of this difficult problem and how to overcome it. It is had from three different sources, can be easily avoided, and when not properly understood and the brick properly treated in drying and burning, it becomes a very serious annoyance.

The first source of trouble or avenue through which this effervescence can be established on brick, is in the dryer. If the brick are dried too hastily, or in other words, if the circulation in a dry kiln is not good and the heat is raised to too high a degree, it boils the dampness into the brick and causes this moisture to adhere in a peculiar manner, so that even if these brick are put into a kiln and otherwise properly burned afterward, they will show the whitewash or effervescence.

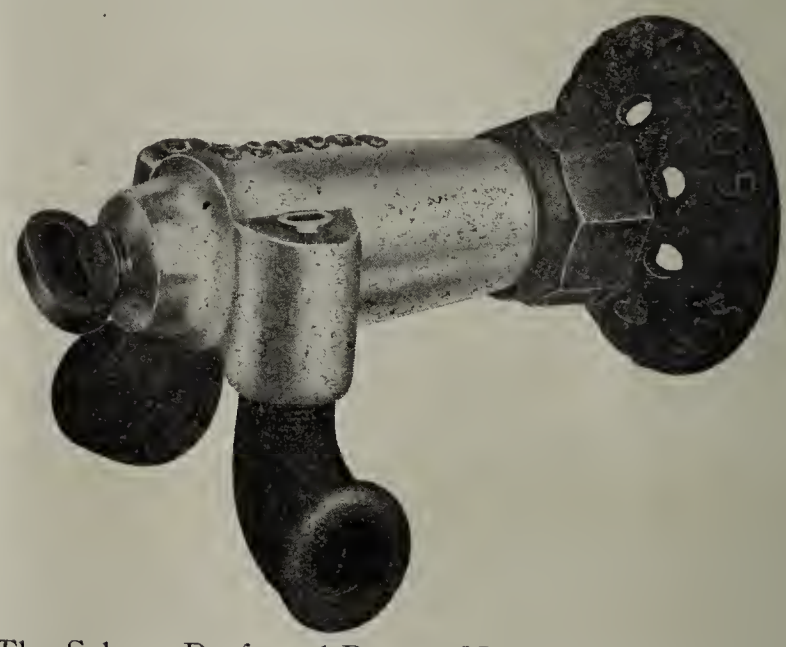
The second source of trouble: If the brick are properly dried in the dryer but the water-smoking process is hastened too rapidly in the kiln, by means of which the same moisture is boiled and cooked into the brick at too high a temperature, you firmly establish the trouble in the second instance, and the brick thus ruined, both in drying and burning, will be troubled with this difficulty ever after.

The third source of trouble is had as follows: Suppose you dry the brick properly in the dry kiln and also water-smoke them properly, but burn the brick just one or two shades too light. Such brick will be troubled with the whitewash in a very serious manner only that in the last instance the whitewash will disappear and again appear at intervals, whereas the whitewash produced from the first two sources referred to, the whitewash will be in evidence almost continuously.

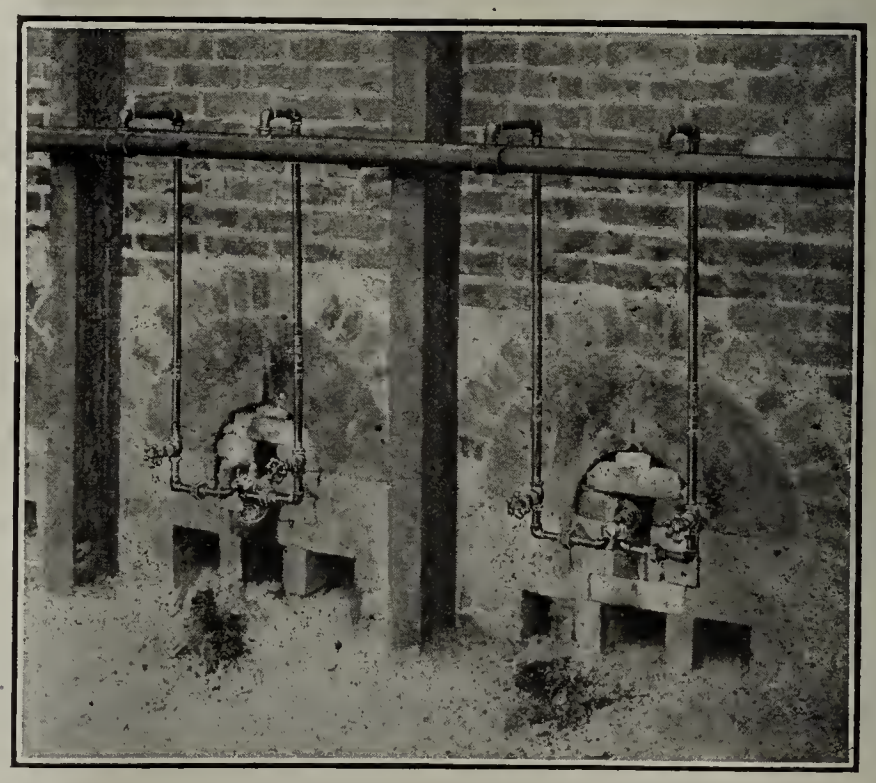
THE SCHURS CRUDE AND FUEL OIL BURNERS

It has long been an acknowledged fact that the burning of brick or any kind of clay goods with oil is by far the best process, the only interference with the successful operation of same has been in the oil burners, but now this is done away with, for John Schurs, 1007 North Main street, Los Angeles, Cal., has come forward with a number of burners that are fitted for the several different kinds of work.

These burners are sold under guarantee, and are designed especially for burning brick, tile, terra cotta, lime kilns and for forge use. They have been proved beyond a question to be the most economical steam and air burner on the market.



The Schurs Perfected Burner No. 1 is designed for down draft kilns. It is the only brick burner having a hood which protects the low fire from strong drafts when water smoking, and draws the flames to the top. The hood saves the fire bags by making a short and open flame. You can see by the illustration just how the hood works. By means of the Universal hanger the flame may be regulated as desired, and turned upward, downward or to either side.

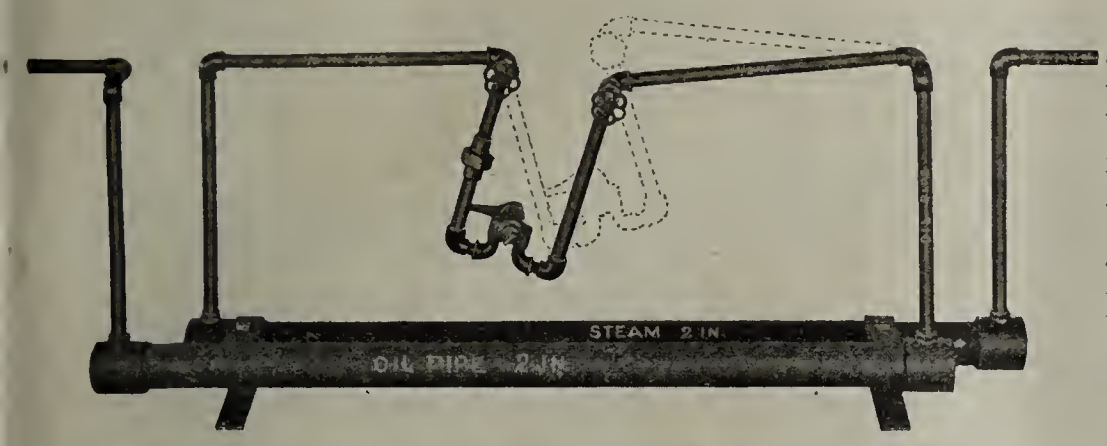


Shurs Burner No. 1 on Down Draft Kiln

The steam chamber and the oil chamber are one casting. When water smoking the hood is screwed back and allows 1-32 inch steam space between the two tips. This increases the power pressure at the tip and good results can be accomplished with very little steam. For a heavy fire, open the tip. One turns and regulates the steam and oil with valves on pipes.

For down draft kilns the Schurs burners are installed as in the illustration, you will notice that they are hung from above, there is a big advantage in this, because it keeps a great deal of obstructive matter from reaching the valves and tips.

The Schurs burner No. 2 is especially designed for common up-draft kilns, and has a handle for adjusting tip to suit low or heavy fire. When water smoking the burner should point downward, for a heavy fire raise the burner, open the steam valve wide, screw handle tip back so as to give the desired amount of steam and regulate the oil with valve to make a vibrating flame, which forces the flame gases to the center of the kiln and back to the head. It is an ideal burner for up-draft kilns. It is always ready, and there is no repairs to make before firing kiln. It has no delicate parts to wear out or clog up. The casting is of solid brass and never gets out of shape.



Schurs Burner No. 2 showing side motion.

In the old style pipe burners, leakage at the screws and around the tips is a great defect. There is no such defect in the Schurs burners.

The illustration shows a No. 2 burner with pipe connections, with side motion to suit arch in kilns, and the other illustration shows its connections with up-draft kilns, thrown forward and downward for water smoking.

G. A. Wild, the well known superintendent of the Los Angeles Brick Co., states he has been using 72 No. 2 burners, and can recommend them to anyone looking for a good burner.

The burners are easily adjusted, which enables the men in charge of the kilns to handle a large number of them at a time.

The Los Angeles Pressed Brick Co., which has three plants, are now using 500 of the Schurs burners, and say they are economical, durable and easily controlled and give entire satisfaction.

The following table shows the per cent of gain with oil over other fuel:

3½ to 4 barrels of oil equal to one ton of coal.
2½ barrels of oil equal to one cord of white oak wood.
2½ barrels of oil equal to one cord of red oak wood.
2½ barrels of oil equal to one cord of black oak wood.
2 barrels of oil equal to one cord of pine or redwood.
42 gallons of oil equals one barrel.
One gallon of oil weighs 7.6191 lbs.
One cubic foot contains 7.476 gallons.
231 cubic inches contains one gallon.

To find contents of cylindrical tank multiply the diameter in feet by 3.1416, which will give you the circumference in feet. One-half the circumference times the radius multiplied by the length of the tank in feet, will give the number of cubic feet in the tank, and that multiplied by 7.476 will give the contents in gallons.

TEXAS BRICK MANUFACTURERS WILL CONVENE AT HOUSTON.

Saturday, July 17th, the Brick Manufacturers' Association of Texas will begin their semi-annual session in Houston. The meeting will continue for three days and it is expected that representatives of the association will be present from all the larger cities of the state.

As a majorty of the delegates will not arrive until Saturday afternoon no effort will be made to call the association together until Saturday night, when a brief session will be held in the assembly room of the city hall. This will be for the purpose of arranging preliminary details and no business of importance will be considered at this meeting.

Sunday the visitors will be given an excursion to Bettison's pier, near Galveston, and will devote themselves to the sport of Isaac Walton, as the geusts of the Houston members of the association.

Monday the real business of the meeting will be transacted. A program of interest to brick manufacturers the whole country over has been arranged and the local members of the association are looking forward with no little interest to the discussions scheduled for the morning and afternoon sessions.

The topics to be considered are as follows:

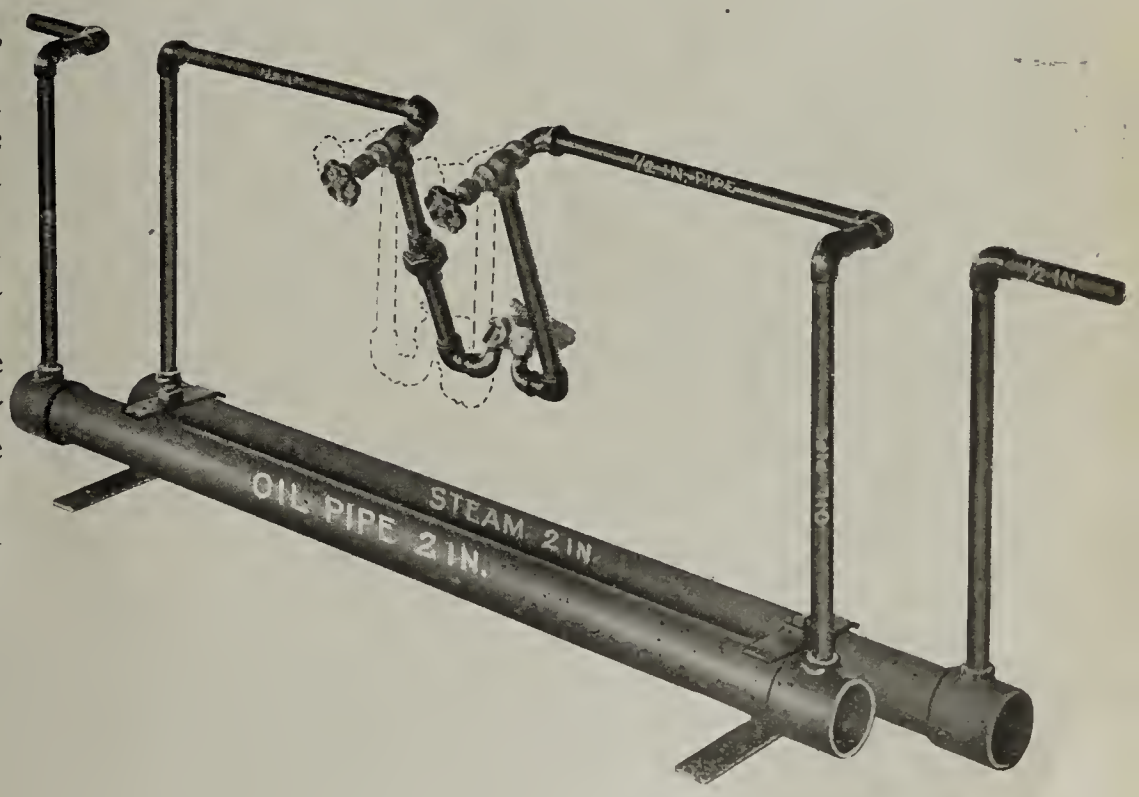
"Utilization of Waste Heat for Water-Smoking and Burning"—W. D. Green, Gonzales, Texas; E. C. Hoadley, Fort Worth.

"Mud Brick"—M. K. Sacks, Houston; S. N. Johnson, Laredo.

"Condition of Market in North and South Texas"—Du Pont Lyon, Sherman; Sherman S. Brady, Houston.

"Keeping Cost of Production"—J. W. Jones, Beaumont; W. E. Weatherford, Ferris.

"Lignite as a Fuel for Burning Brick"—R. D. Harry, Dallas; W. M. Staniforth, Gainesville.



Schurs Burner No. 2 on up draft kiln ready for water's working.

"Best Clamp Construction"—Edw. Whitmer, Thurber; Walter Bermett, Millsap; J. N. Harris, Waco.

"Lien Laws of Texas as to Protection for Brick Makers"—O. H. Grass, Waco; C. R. Sherrill, Corsicana.

"Sand and Lime Brick"—W. O. Fitch, San Antonio.

The officers of the association are W. M. Staniforth, Gainesville, president; W. E. Weatherford, Ferris, first vice president; S. B. Marshall, Mesquite, second vice president; J. M. Harry, Dallas, secretary and treasurer.

A HUGE FILTERED WATER RESERVOIR FOR LONDON.

Written and Illustrated by the English Correspondent of the Scientific American.

The maintenance of an adequate water supply for the constantly expanding English metropolis is a problem of supreme importance and one of no little difficulty. The main sources of supply are the River Thames at a point well above tidewater, the river Lea, and wells sunk into the solid chalk. Recently the facilities for supplying water have been appreciably improved by the erection at Honor Oak, in the southeastern suburban area, of a huge covered-in reservoir, the largest of its type in the world, for storing filtered water, the capacity of which when full is 58,000,000 gallons.

The arches that support the roof.

The necessity of a new reservoir was recognized as far back as the early nineties. Not until 1898 was work begun by the local water supply company. In that year a large brick-making plant was erected on soil eminently suited to brick making. The result of this development was rendered obvious during actual constructional work, since the brick material was available on the spot and delays, as well as cost of transport, were avoided. The saving thus effected may be readily realized when it is considered that upward of 16,000,000 bricks were utilized in the building of the reservoir. At the same time the brick plant offered an economical solution of the problem of disposing of the greater part of the excavated material for the foundation of the reservoir, etc., which material aggregated 173,000 cubic yards.

After all the water supply companies of London were subsequently consolidated into the Metropolitan Water Board, the undertaking was rapidly completed. The undertaking was designed and carried out under the supervision of Mr. J. W. Restler, M. Inst. C. E., the deputy engineer-in-chief of the Metropolitan Water Board, to whose courtesy we are indebted for the accompanying illustrations and for much information.

It is the primary purpose of this reservoir to maintain a low-pressure supply throughout the metropolitan area on the southeastern side of the Thames. But if occasion should demand, it can be dispatched by means of mains under the river to the northern territory. The maximum water level of the reservoir is approximately 144 feet above ordinance datum. The depth of water throughout the greater part of the structure is about 21½ feet, but in a part of the northeastern section it reaches a depth of 34 feet.

The reservoir is divided at right angles into four sections, each of which is independent of the others, so that any one may be emptied when desired for cleaning, without interfering with the service, suitable appliances being provided

for diverting the water from the supply main into one or other sections. The building is erected on a natural clay formation, the flooring being of solid concrete forming inverted arches, crossing one another at right angles. From the apex of each groining, spring piers of solid brick work of cruciform section to carry a brick roof, comprising a series of segmental arches running parallel the whole length of the structure, with segmental jack arches at right angles carried from pier to pier throughout the series. The reservoir is therefore divided into a series of cells 21 feet 6 inches square from center to center of the brick piers, the thickness of the brickwork of the latter being 18 inches with a width across of 4½ feet. Down the centers of the inverted arched floor extend drainage channels communicating in a well near the intersection of the reservoir into the four sections, while at the actual point of intersection of the division walls is a circular valve chamber 24 feet in diameter extending from the bottom to the roof of the building, and into which lead the mains for supply, intercommunication with the four sections, and draw-off, these pipes being of 42 inches diameter and fitted with 36-inch valves operated from a valve house above.

Interior, Showing Way of Dividing Reservoir into Bays

In addition to the brickwork for the arched roofing, there is a 6-inch outer covering of concrete finished with clean cement, upon which is distributed a thick layer of clay and 6 inches of mold originally cleared from the site, so as to present a flat, level top surface. At frequent intervals 6-inch air pipes are distributed over the bays for ventilation and admission and escape of air during the respective processes of emptying and filling the reservoir.

The two division walls which run at right angles and divide the reservoir into four sections are cambered back to back with the intervening space filled with concrete. The outer walls are of concrete, with brick lining, ample precautions having been taken to bond the two thoroughly together. The thickness of the retaining walls varies from 16 feet to 6 feet at the base, and each bay is provided with a buttress reaching in most cases to the first pier. In those places where the pressure is the greatest the buttresses for the retaining wall are carried back to the fourth bay from its face. Around the outside of these retaining walls a puddled clay wall 3 feet thick is provided, the puddle being taken well down into the London clay and rendered thoroughly water-tight by careful tamping. This wall is carried up to, and connected with, the layer of clay extending over the entire roof of the structure. On the northern and parts of the eastern and western portions, where the top of the reservoir projects above the natural surface of the ground, an earthen embankment is provided, which embankment is composed of alternate layers of earth and burnt ballast of 20 inches and 4 inches thickness respectively, and with a slope ranging from 2½ to 3½ to 1.

The reservoir measures 824 feet in length between the walls, and has a maximum width of 587 feet. The total area covered approximates 14¼ acres, the actual water area being a little over 10 acres. The supply is drawn from the 42-inch main, which brings the filtered water from the pumping station at Hampton, some 17 miles distant. The outlet pipe is of the same diameter. The supply can be augmented from a deep-well pumping station, which has been erected on the site, and from which a large quantity of water can be drawn. This well has a diameter of 11 feet and is sunk for a depth of 300 feet, the lower half of which is through chalk. Headings have been driven into the latter in all directions to a total length of 3,400 feet. The water is raised by two sets of three-crank vertical triple-expansion engines coupled to deep-well pumps having cylinders of 18 inches bore by a stroke of 5 feet. The water thus obtained, in addition to being discharged into the adjacent reservoir, can be delivered into mains feeding two other reservoirs in the vicinity. The total cost of the enterprise has been $1,200,000.

THE HUDSON RIVER BRICK TRAFFIC.

William E. Curtis says: "I do not know a more thoroughly useful river than the Hudson. The Saugenay and the Columbia, with which it is often compared for beauty of scenery, practically have no commerce. The Danube, the Nile, the Irrawaddy, the Amazon, the Orinoco, the Rio de la Plata, the Ohio, the Missouri and the Mississippi are all much longer and larger, but have nothing like the traffic. I have heard it asserted that the Hudson carries more tonnage than all the other rivers in the United States combined, and more, even, than the Thames, the Seine, the Elbe or the Mersey in comparison to its length.

Probably no other valley in the United States has so much traffic as that of the Hudson, where two railroads and a great river are carrying the produce and manufactures of a continent to our greatest place of export and returning with the merchandise of New England and other parts of the north Atlantic coast, as well as the imports from foreign lands.

The navigation season on the Hudson is about the same as that on the great lakes and will average seven months, during which time about twenty million tons of freight are transported, mostly upon barges and canal boats, which go down and up lashed together like an enormous raft and towed by one or more powerful tugs.

The largest item in the traffic is building brick, which are made at many points along the Hudson from the clay of which its banks are composed. The brick kilns are too many to count; some of them are two miles long, and three or four of them produce more than a million brick a day. Some of them employ several hundred men, and, altogether, about 22,000 men and boys, mostly of foreign birth, are engaged in brick making. The total cargoes of brick floated down the Hudson during the year are about 6,000,000 tons. They are transported in barges made especially for the business, some of them carrying half a million bricks.'

CHARACTERISTICS OF A FOREMAN.

There are many who doubt the expediency now of promotion from the bench to the foreman's post. It is contended that the changes in methods of manufacture are so radical that there is not now the same need for the superior handi-craftsman—that what is required is a controller, a master of method and of organization. We can only accept this contention with the important proviso that the man of thought who is to be ideal foreman of the future shall first have such a practical training at the bench as to have acquired a sound knowledge of workmanship and a complete sympathy with workmen. Contact is imperative for both acquisitions; without them a man cannot control men or methods. There is nothing more subversive of discipline than the ridicule even of one man, and it is quickly awakened, and justifiably so, by the slightest display of incapacity to do any bit of work. A man cannot be a really efficient foreman without being a capable workman. He must, however, be more than that, and the elements of development are in this direction; so also are the divergencies from unanimity of opinion.

GOOD TECHNICAL AND GENERAL EDUCATION.

The workman who aims at being a foreman must secure as great a degree of technical and general education as is possible to him. If the attendance at evening classes involves hardship and self-sacrifice, the result is advantageous in the formation of character.

It is important that he should know, for instance, about the qualities of metals used, the principles of mechanics and physics, and the whys and wherefores of the details of the designs to be embodied in metallic form, as well as the elements of machine-tool design and power distribution. There are other important studies, but these examples suffice.

Even in the case of a ship-fitter, smith or forgeman, where manual labor obtains still to a large extent, there is need for technical training. And in all cases there is possible great gain by the pursuit of knowledge which, although not immediately useful, tends to general culture. This point need not be elaborated here; the development of a disciplined mind will be regarded as of great importance.

EXPERIENCE IN DRAWING OFFICE NEEDED.

Drawing-office experience is equally necessary; but the cases are very rare where a foreman who has been trained exclusively as a draughtsman has been successful; there is always the lack of intimate knowledge of workmanship. Indeed, it is possible that a prolonged period in the drawing-office may partly unfit for foremanship a man with earlier workshop training.

The atmosphere of the drawing-office, and the psychological conditions prevailing, are very different from those obtaining in the shops. In the one case the problems are associated with strains requiring calculation, and there is more or less of mechanical method; in the other the difficulties are connected with personal idiosyncracies, where conditions do not repeat themselves and cannot be standardized. In the one instance it is mathematics, in the other humanity.

A foreman should be able to easily read a drawing and to readily discern an inaccuracy. This latter raises a point which has involved heartburnings between the drawing-office and the shops. The duty of the workman, the machine-man, is to obey; to follow his drawing implicitly. Any other rule would mean confusion. But this scarcely holds with the foreman, who from his practical experience in the shops and drawing-office, ought to be able to suggest modifications which are acceptable, because they simplify machining or fitting, or for other reason. The foreman who neglects to make, and the draughtsman who refuses to accept, such suggestions, fail in their duty.

EXPERIENCE IN COST DEPARTMENT.

There are some firms who only promote men to foremanship if they have been in the premium, bonus, or costs department. This course is satisfactory; but again we must interject the reservation as to the duration of service in a department which is only an adjunct to the factory. The premium-bonus system has proved very satisfactory; but there is a tendency to make too much of it.

The card system is another case. We have heard of a works where there is a staff appointment of a "card inventor." Inventors, to which class belong premium fixers and card and index makers, are like mothers whose goslings are all swans. Where they have uncontrolled sway there is trouble. What is wanted is a reasonably good system of premium standards and cards, which should be altered reluctantly, and only on unquestionable grounds. They should be operated conscientiously.

A foreman ought to know the system well to be able to restrain and regulate the rate-fixer. Men who become imbued with the spirit of the card system sometimes have their imagination limited by the four edges of the card. That is well for one who is to remain a member of the premium-bonus staff, but it is otherwise with a foreman.

COMPOSITE EXPERIENCE NEEDED.

The training of the successful foreman should thus be composite. He should have a liberal education, although this, fortunately, may be supplied in later years by reading and other means of culture. He should have a sound training at his trade in the shops; this is indespensable. Technical training is invaluable, and to this should also be added some experience in the drawing-office and costs department. But to these there must be added those qualities which mark men as leaders. There is, first, ambition in the truest sense, and the readiness to suffer privation in achieving an end. This is akin to self-discipline, to the development of a well-balanced mind, and, therefore, to a strong sense of the relative importance of justice and right. These two will enable him to avoid nepotism and favoritism—two of the greatest pitfalls. This, it may be urged, is a gospel of perfection: but it is well, once in a while, to aim high. Moreover, we are persuaded that employers could do much by encouraging intercourse between foremen to a greater degree.

There are, it is true, foremen's associations, but they are not sufficiently supported by the men who could profit by them; nor do they meet often enough. It is important that there should be considered at their meetings economic and social problems asociated with production, as well as purely technical questions, while visits to works at home and abroad should be arranged at frequent intervals. Nothing tends more to efficiency in management than perfection of system, and many hints in this direction could be gleaned by travel. There should be no difficulty: one firm might welcome the foremen of another in exchange visits, to the advantage of both.

Even an international exchange might be possible. But in any case there can be nothing but advantage from any effort to improve the characteristics of foremen. On them the economy of production greatly depends. They should be exemplary, being the first men, as well as oversmen, even at six o'clock in the morning.—*Engineering Magazine.*

A NEW BRICK MACHINE CONCERN.

Alexandria Repress Brick Machine Manufacturing Corporation, Alexandria, Va.; Edwin L. Cockrell, president, Woodbridge; David N. Rust, Jr., vice president and treasurer, Braddock Heights; Wm. R. Stone, Jr., secretary and manager, Braddock Heights, has been incorporated. Capital: Maximum, $25,000; minimum, $10,000. Objects: Manufacturing and selling brick machinery.

BIRMINGHAM BRICK INDUSTRY IS KEPT BUSY

The movement of the brick market has been brisk during the past few weeks and the outlook is bright for good summer and fall market.

The brick used in the construction of the Empire, the Brown-Marx annex, the Chamber of Commerce and the Farley buildings were all made in Birmingham.

While the local market is rather slack at present, the pressed brick manufacturers are setting a splendid foregoing business. The pressed brick companies all report a good market with indications of further improvement.

The awarding of the contracts by the city of Birmingham for four new public school buildings in Greater Birmingham will call for a million and a half brick. These are to be furnished by the local manufacturers.

Here is the number of brick that were used in the erection of the four skyscrapers now being erected in Birmingham:

Brown-Marx annex, 1,500,000.
Empire building, 250,000.
Chamber of Commerce building, 500,000.
Farley building, 500,000.

The city of Bessemer placed an order with a local firm recently for 750,000 brick to be used in the pavement which has been ordered in that city.

The new 10-story office building, the city hall and the new school buildings at Pensacola, Fla., were made of Birmingham brick.

The Sibley-Menge company, which manufactures fancy pressed brick, has placed orders within the past three months which call for two million bricks.

Birmingham firms are now supplying pressed brick for the construction of a new office building in Atlanta, and for several new court houses being built in Georgia and Florida.

According to the most conservative estimates the Birmingham district is now turning out annual clay products valued approximately at $2,170,000. The monthly payrolls of these concerns amount to between $60,000 and $70,000, and a large army of workmen is given employment.

In the next few weeks work will be started on several new churches and public buildings in the Birmingham district, and these improvements will call for two or three millions of brick.

Birmingham patronizes its own brick industries and it has been a long time since any new building in this district was built of foreign brick. In fact, the Birmingham brick has become so popular here of late that they are shipped as far south as Florida, and as far north as the Carolinas.

Here is a table showing the value of the annual output of the various clay manufacturers of the district:

Common brick	$ 520,000
Pressed brick	150,000
Fire brick	800,000
Fireproofing	100,000
Sewer pipe	250,000
Paving brick	300,000
Clays	50,000
Total	$2,170,000

The fireproofing used in the skyscrapers is made at North Birmingham.

FIRST BRICK MADE IN AMERICA.

Two brick from the first brick house erected on the American continent are on exhibition in the flag and relic room in the Ohio state house. They are from the house built at Jamestown Island, Va., by Gov. Richard Kemp of that colony in 1638.

CERAMIC MEN MAKE SUCCESSFUL TESTS.

The Ceramics department of the University of Illinois, has successfully completed a series of experiments to produce a high grade stoneware from low grade material at a low cost. The experiments are the result of long years of careful work R. T. Stull who is in active charge of the Ceramics laboratory at present, and by former Prof. V. C. Bleininger, under whose direction the experiments were begun. The achievement of their goal is the sequel to an equally long and successful series of experiments run on enameled brick slips.

From the best enameled brick slips for white lining, four of the clearest were selected and tried on four different clays, of which one each was from California, Macomb and Whitehall, Ill., and Bloomingdale, Ind., that from Indiana producing the best results, though all were excellent. These clays were ordinary cheap clays, such as are now used for terra cotta, stoneware, enameled brick and sewer tile, and which burn to a full buff color.

The trial pieces, made in the form of small mugs, and the models and molds, were designed and made by members of the class in designing and shaping. They are made mechanically in one piece on a potter's jigger, instead of by the usual two-piece method, in which mug and handle are made separately, and welded together by hand afterwards.

After being taken from the molds, the seams are scraped and sponged and the white veneer, or engobe, applied to the inside, over which a clear, brilliant glaze extending up over the rim to the outer edge, is spread, being cut off by a sharp knife to leave a well defined line. The piece is then dipped on the outside in rich deep brown glaze, meeting the white line. The mug is then dried and finished in one firing of the kiln. The object of the experiments was to encourage stoneware manufacturers to produce a higher grade of their ware. It is considered that the result of these experiments should convince the manufacturers of the practicability of doing this. Mr. Stull is to be congratulated upon the happy solution of his difficult problem, difficult in that four different compositions, i. e. white engobe, clear glaze inside, brown glaze, outside and the body clay itself, must be so adjusted as to produce a harmonious development with respect to shrinkage and perfect bond, during application and firing.

That the product is high grade may be seen by one look at the specimens in the laboratory. The following figures show how low the cost of production is: White engobe less than $12 a ton, dry; the clear glaze inside and the brown outside less than $30 a ton; and the clay, from 15 to 75 cents a ton delivered at the factory.

ALL CLAY WORKERS TO BE ORGANIZED.

Perth Amboy, N. J.—Owing to recent disputes with reference to hours, wages and methods of handling material, officials of the American Federation of Labor and the International Brick, Tile and Terra Cotta Workers' Alliance are taking steps to organize all branches of clay workers in this city and vicinity. An important meeting will be held in Keasbey, on the outskirts of this city, early next week, at which Frank Butterworth, first vice president of the International Terra Cotta Workers' Alliance, will probably speak. He attended a meeting of the clay workers here recently and announced that unions should be perfected immediately to protect the thousands of men who are employed in the plants and factories.

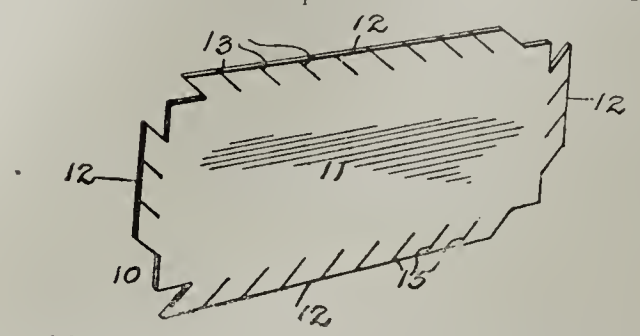
Efforts are also being made to organize the clay workers in the plants at South River and the movement for organization in these branches is spreading rapidly in this section.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

917,930. Building-Block. Frederick A. W. Davis, Indianapolis, Ind. Filed Sept. 28, 1908. Serial No. 454,993.

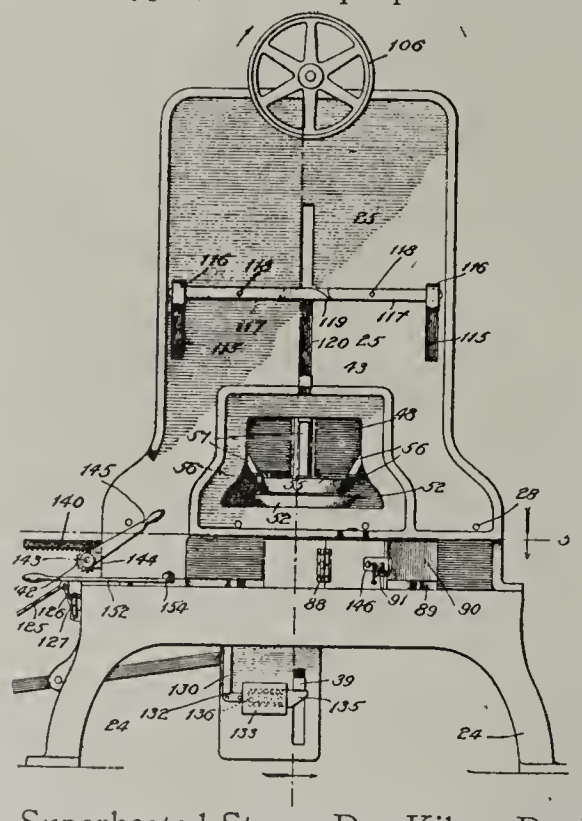
A building block consisting of a body molded from plastic material and a sheet of impervious material forming a side



thereof, said sheet of impervious material having a formation with which the plastic material will interengage whereby it becomes an integral part of the block when finished, said formation also constituting a surface with which plaster will likewise interengage when applied to the wall in which the blocks are embodied.

918,855. Tile-Making Machine. Harry P. Holman, Utica, Ill. Filed Feb. 28, 1908. Serial No. 418,200.

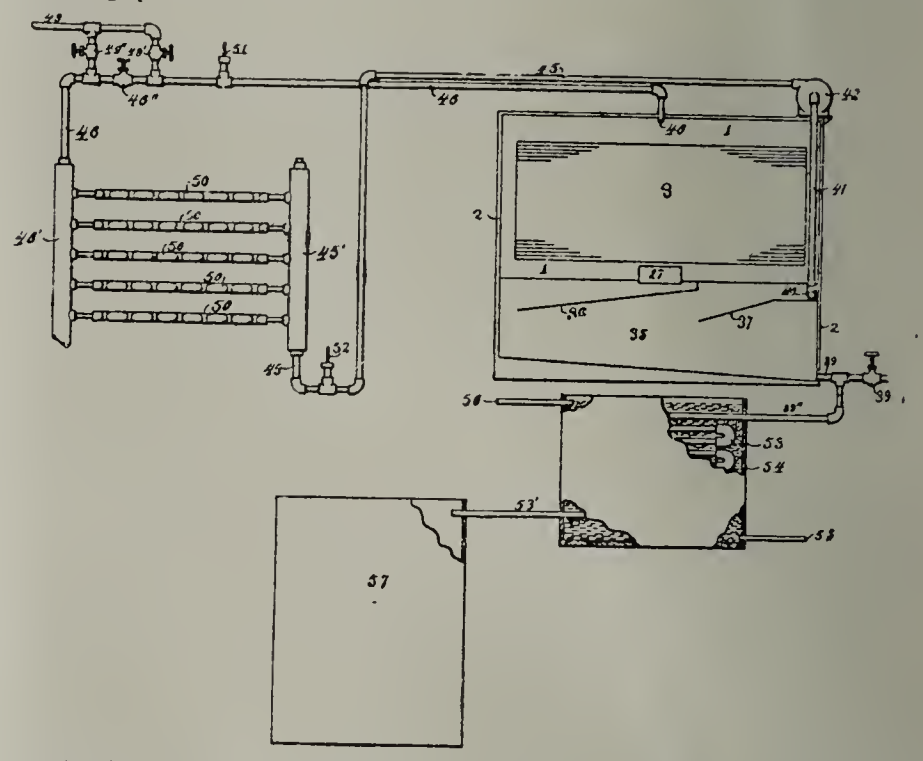
In a machine of the character set forth, the combination of a mold, a tamper and a hopper, of an expansible hopper formed of overlapping sections slidable upon each other and projecting into and co-operating with the inner surface of said first-named hopper, and means for holding the lower edges of said sections in contact with the inner surface of said first-named hopper, for the purpose set forth.



918,334. Superheated-Steam Dry-Kiln. David E. Lain, Bellingham, Wash., assignor of one-half to Edwin G. Jewett, Bellingham, Wash. Filed July 6, 1908. Serial No. 442,197.

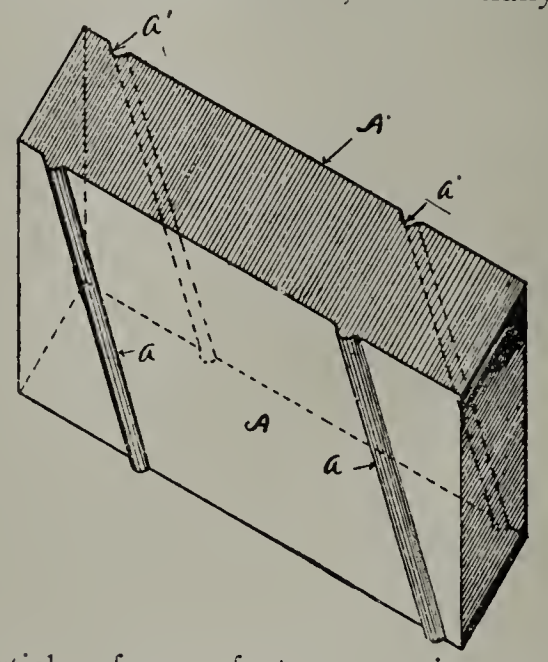
In a superheated-steam dry-kiln, the combination of an inclosed compartment, a circulating conduit system connected to said compartment in such manner that said compartment and said conduit system form a circuit which is closed or closable at all points except for exhaust, a steam superheater connected into said conduit system, a source of live steam and a conduit leading therefrom and controllably connected with said conduit system.

In a superheated-steam dry-kiln, the combination of an inclosed compartment, a diaphragm separating said compartment into a major and a minor room and having one or more openings through the same, said major room being suited to contain a quantity of moisture or pitch-bearing material, a line of pipes, one end being connected to said major room and the other end being connected to said minor room in such manner that said line of pipes together with said rooms form a circuit, said minor room having an outlet into the outer air, and a steam superheater included in said line of pipes.



918,980. Wire-Cut Brick. Frank B. Dunn, Conneaut, Ohio. Filed March 13, 1908. Serial No. 420,849.

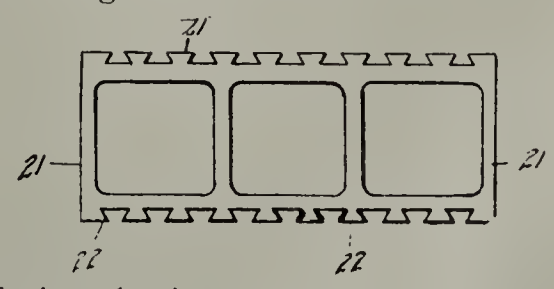
As an article of manufacture, a wire-cut brick having wire-cut ribs on the side thereof, substantially as set forth.



As an article of manufacture, a wire-cut brick having wire-cut ribs on one side, and wire-cut grooves in the opposite side, substantially as set forth.

919,018. Enameled Brick and Tile. Joseph H. Jackson, Pittsburg, Pa. Filed Jan. 16, 1907. Serial No. 352,486.

A tile facing having peripheral rearwardly directed flanges, each flange having a barb on one side of its edges, said barb extending angularly with respect to the plane of the flange and having its plane extending at right angles to plane of the facing.



A tile facing having peripheral rearwardly directed flanges, each flange having a barb on one of its edges, said barb extending inwardly at right angles to the plane of the flange and having its plane extending at right angles to the plane of the facing.

PACIFIC COAST NEWS ITEMS

The expected has happened in the San Francisco brick market and the established price of $9 per thousand for common brick that has been maintained for the past six months has given away to practically the same figures that were current a year ago. Although most of the large firms engaged in the business had pooled their selling interests and controlled the market for a time, the starting up of so many small plants, lured on by the prospect of a profit on the output of their plants, has brought on the cutting of rates that had been feared and once more each plant is getting as much of the business as possible and the question of price is being lost sight of. A week ago one large firm retaliated on the action of the small plants in cutting prices and named an $8 rate. Since then this has been greatly lowered and some common brick in large quantities were recently sold at a figure but a little in excess of $7. There are many of the small plants located in places where natural advantages are lacking that cannot manufacture brick and sell it at a rate less than $8 and it is anticipated that the immediate result will be a closing down of a number of plants, or at least, there will be a curtailment of the output. The great need of brick immediately following the fire led to the establishment of plants in this vicinity in places where brick cannot be manufactured cheaply, and it is conceded that the output of this section with all the plants running on regular time would be greatly in excess of any probable demand.

Although the market for common brick is badly demoralized again, there is a good demand for pressed brick and prices are being maintained at the rates that have been common for the past year. Terra cotta is also in good demand and it is interesting to note that the use of this article for facing purposes is on the increase. There have been no large contracts for terra cotta taken recently as there are but few large buildings now in course of construction, but the number of small contracts is increasing.

Manufacturers of sewer pipe are expecting this to be a banner year for that business. The towns in the interior of the state are growing very rapidly and a large number of these are planning sewer systems. It is believed that some of the sanitary laws recommended by the Master Plumbers' Associations will be passed by the state legislature next year and many towns are preparing to get sanitary work done in advance.

The announcement is made that the Monterey Brick & Stone Co., which has been operating a plant for some time at Seaside, in Monterey county, has secured possession of an extensive clay deposit in the vicinity of Sacramento, Cal., and will shortly remove the plant to that place and will also enlarge the equipment.

A large contract for brick was recently let to the California Pressed Brick Company of Niles Cal., for the brick to be used in the construction of the State Hospital at Agnews to replace the building destroyed three years ago. Other large contracts have also been taken lately and it has been found advisable to add considerable new machinery to the plant in order to keep up with the requirements.

The plant of the San Luis Obispo Brick Company, at San Luis Obispo, Cal., has been thoroughly overhauled and placed in operation after a long shut down. Local contracts of considerable size have been received and a good summer's run insured.

Improvements of an extensive character are being made at the big plant of the Pyrmont Brick Company, at Lincoln, Cal. M. J. Dillman, of Sacramento, vice president and manager of the company, is on the ground most of the time and he announces that the construction of a large manufacturing plant is one of the things promised for the not distant future.

Another firm that is making extensive improvements at its works is the Corona Pressed Brick & Terra Cotta Co., of Corona, Cal. This firm has just erected three new kilns and is planning to add others at once. Heavy orders have been secured lately and the sewer pipe end of the business is very promising.

The Pima Brick & Tile Co. of Tuscon, Ariz., has made some sample runs of brick and the output proved to be so satisfactory that it has been decided to make additions to the plant at once. Machinery with a capacity of 40,000 brick a day will be installed this summer.

The Tuscon Pressed Brick Company of Tuscon, Ariz., has commenced operations for the summer and is turning out a brick that is said to be of very superior quality. Shipments have already been made to distant points and a large business is expected to develop. As soon as the present plant is running smoothly it is planned to commence preparations for the manufacture of fire bricks.

The St. Johns Clay & Pressed Brick Co. at St. Johns, Ore., has merged with the Pacific Brick & Marble Co., a concern recently incorporated there with a capital stock of $100,000. A large factory building will be erected at once and brick and elbram, a new building material, will be manufactured.

The Inter-Mountain Cement & Brick Co., which operated a brick plant at Idaho Falls, has decided to erect a similar plant at Salt Lake City, Utah. The new plant will cost approximately $50,000.

The Crown Brick Company has been incorporated at Salt Lake City, Utah, with a capital stock of $100,000. Those interested in the enterprise are A. M. Wrench, H. S. Stowe, M. J. True, W. S. Elton and E. C. Lackner.

The Vancouver Hassam Paving Company has been incorporated at Vancouver, Wash., and a plant will be installed there shortly for the manufacture of paving bricks. Following the lead of many other cities in the northwest, Vancouver is to be paved with paving bricks and the local company will bid for the contract for furnishing the material.

A bed of good clay has been discovered near Lamont, Wash., and an option on the property has been taken by T. B. English. He is now making some experimental burns and if the produce comes up to his expectations he will arrange for the installation of a plant.

The Ione Fire Brick Company will hold its annual meeting in San Francisco early in August and it is understood that the capital stock of the concern will then be increased.

WILL ENLARGE THEIR PLANT SOON.

In order that a larger number of paving blocks may be turned out each day at the Egyptian Paving Block works north of Murphysboro, Ill., the management has decided to build four additional kilns and the work will probably be commenced within the next two months. This addition will increase the kilns six to ten and many more blocks can be burned.

Machinery at the plant at the present writing can turn out 50,000 blocks per day, but owing to the restricted kiln room, but 20,000 are being taken from the cut-off machines.

Superintendent of Construction Ellsworth Oden has resigned, having finished his work at the local plant and O. H. Downey, of Dayton, Ohio, has been employed as superintendent of the plant. Mr. Downey comes to the Egyptian plant well recommended as a brick specialist.

At the present writing sixty men are employed at the plant and are working every day.

Brick are now being loaded for shipment to Carbondale where the Egyptian plant representatives landed the first large brick contract.

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GEORGE H. HARTWELL, EDITOR

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Vol. XXXV. JULY 15, 1909. No. 1

"I like to read American advertisements. They are to themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

The season for lemons never ends.

Easy times often account for hard habits.

Jokes are like nuts—the dryer they are the better they crack.

This is a fast age, but our ancestors managed to get ahead of us.

And the man who really knows his business refrains from telling it to everybody.

A man who thinks more of a dollar than he does of his self-respect is insult proof.

The task Mr. Fitzpatrick has set himself is that of diminishing our wastefulness, not with a natural resource, but with something that we have taken great pains to produce—our buildings.

For twenty years he has labored in this cause and is certainly the father of the fire-prevention movement in the United States. Through his activities civic and other organizations have been formed, city authorities have been induced to revise building ordinances, and the building bureaus of cities have awakened to a zealous performance of their duties.

In the past few years, he has given considerable time and attention to what might be called a popular campaign in the direction of betterment of building conditions.

He realizes that whatever the people really want they are bound to get, and if they can be aroused to see things as they actually are, insofar as building is concerned, it will not be long before drastic curative action is compelled.

Lately he has had articles on fire in a number of magazines. He tabulates the appalling losses and cost of fire in a year's time, something like $600,000,000, almost as much as the entire yearly expenditure for new buildings and repairs!

He compares the wooden cities of Americ with the brick cities of Europe, and finds the former "wanting;" he blames the insurance companies very largely for the craze for cheap construction with us, and interestingly describes what really is a fireproof building.

BUILDING AT HIGHEST RATE.

The figures for the first half of the year, as given out by the Chicago building department, make a remarkable showing, and if continued at the same rate for the second half of the year, will make the year's totals about 60 per cent greater than during any previous year in the history of the city and will carry them to the $100,000,000 mark.

The figures are 6,069 permits with a total frontage of 165,506 feet and a cost of $50,028,180, as against 5,405 permits with a frontage of 151,388 feet and a cost of $29,375,875 for the corresponding period of 1908.

Of much interest also in this connection is the statement by Building Commissioner Campbell that the commission of architects which is revising the building code intends to recommend a maximum height of 200 instead of 260 feet as now. The effect of this, it is believed, will make for an expansion of the building district.

Building operations for June in the large cities of the country show continued activity with a marked increase over June a year ago.

For the fifty cities included in the statement there were 14,880 permits issued at an estimated cost of $57,614,974, as against 13,443 buildings with a cost of $51,443,406 for the same month a year ago. This is an increase of 1,437 permits and $6,170,568 in cost, an increase of 12 per cent.

Chicago is second to New York, with a total of $8,271,050 as against $11,704,725 for the latter, but Chicago showed a gain of 26 per cent while New York showed a decrease of 31 per cent. Philadelphia is third with $4,156,690 and an increase of 38 per cent. San Francisco next with $2,983,423, as against $2,573,776 for June, 1908, an increase of 16 per cent. Minneapolis, which comes fifth, makes a fine showing with $2,338,515, as against $877,020 for a year ago, an increase of 167 per cent. Des Moines shows the largest percentage of increase, 279 per cent, but Salt Lake City is a close second with 249 per cent.

AUSTRIAN CHINAWARE TRUST DISSOLVED.

Washington, July—On Nov. 27, 1907, Consul John Steel Twells, of Carlsbad, reported that the largest chinaware manufacturers in Austria had formed a trust, with the object of increasing the prices of china goods and of establishing two market prices, one for Austria and the other for the United States, it being held that the class of goods exported to the United States differed materially from that sold in the home market. The consul now reports, under date of May 24, 1909, the dissolution of this trust, which he writes should be a matter of much interest to American manufacturers and dealers.

OBITUARY

The Hon. George M. Hooper, millionaire brick manufacturer, and for three terms a representative of the state, died at his home in Bridgewater, Mass., in his 71st year. He was born in Bridgewater and engaged in brickmaking in 1859. He is survived by five children.

John M. Mayer, manufacturer of building supplies at 179 Moore St., Brooklyn, N. Y., died of heart disease. He was 28 years of age and engaged in business with his father.

John Perone, age eighty years, and a well known tile worker at Zanesville, Ohio, died at his home, 13 Marietta St., death was due to a complication of diseases after an extended illness.

FIRE! FIRE!! FIRE!!!

A toy balloon was responsible for a fire at Michael Gaynor's brick works, 31st and Tasker Sts., Philadelphia, Pa., which destroyed the sheds and caused a loss of $1,000.

The plant of the Wilkesbarre (Pa.) Cement Brick Co. was partly destroyed by fire started from a spark from a railway locomotive. The loss is $15,000. Partly insured.

Sparks from a kiln of the Westwood (O.) Brick Works set fire to the sheds of the plant and destroyed them, causing a loss of $1,000; partly insured.

The Fred Baker brick works at Wilson, Ct., suffered a loss by the sheds burning.

The Johnson Brick Works at Newfield, Middletown, Ct., suffered a loss by the sheds burning to the ground.

WILL TEST OKLAHOMA CLAYS.

Mr. L. C. Snider, M. A., of the University of Indiana, who has been appointed chemist of the Oklahoma Geological Survey, will spend the summer at the government testing laboratories at Pittsburg, Pa., making tests of Oklahoma clays under the direction of A. V. Bleininger. Director Gould of the Oklahoma Survey is arranging with the clay men and commercial clubs of the State to send clays to Pittsburg for testing.

There are some very valuable clays in the new state and abundance of fuel—coal, oil and gas, for their manufacture, The market for clay products is steadily increasing but so far the people have had to send out of the state for about everything used.

It is believed that the results of the tests made by the Survey Chemist this summer, will justify the establishment of a number of clay products plants in Oklahoma. Both the raw material and the market are at hand. Nothing is needed but the installation of plants.

MANY INDUSTRIAL PLANTS INCREASE ACTIVITIES OWING TO RUSH OF ORDERS.

The Kittanning Fire, Clay & Brick Manufacturing Co., Kittanning, Pa., employing 400 men, has been compelled to go on double turn to fill its orders. The Cook and Pennsylvania China companies, employing more than 1,000 persons, have enough orders on their books to keep the plant running until next January. The Kittanning Iron & Steel Co. has sufficient orders for a six months' steady run. The Pittsburg Plate Glass Co. and the Kittanning Plate Glass Co. are behind in their orders.

ACCIDENTS, DAMAGES AND LOSSES

A premature explosion of dynamite at the Black Horse Clay Mine near New Cumberland, W. Va., instantly killed J. T. Krater, aged 35 years.

The Carter Co. (Ky.) Fire Brick Co. plant is to be sold at public sale at Grayson on the court house steps July 22d, by order of the court.

Forty cases of typhoid fever are reported at the Washburn brick yards in the town of Ulster, N. Y. Twenty are in bed. The health officer is analyzing the well water which is probably the cause.

J. H. Parks, an employe of the Hibbard Brick Co. at Kearney, Nebr., was killed by falling between the wheels of a wagon and a kiln when the team became frightened.

Drivers of the Washington (D. C.) Brick Co. were fined for dropping dirt from their wagons in the street. An appeal will be made for a modification of the police regulations.

Frederick Schenkel was killed by the falling of the clay bank at the Sterling Brick Works at Marietta, Ohio.

Mr. Austin, a driver for The De Arment Brick Mfg. Co., Petoskey, Mich., fell from a loaded wagon of brick and the wheels ran over his legs, so that he will be laid up for some time.

Creditors have begun involuntary petition in bankruptcy against the Muscogee Brick & Terra Cotta Co. at Columbus, Ga. The president of the company admits its inability to pay its debts.

THE COST OF BRICK LAYING BY A MUNICIPALITY.

As a result of the very careful investigation of the Sewer Department of the city of Boston, Metcalf & Eddy, consulting civil engineers to the Boston Finance Commission, present in a recent report some very interesting facts regarding the cost of brick laying by municipal employees. Comparing the smaller sewers built by the Massachusetts Metropolitan Commission with those built by the day labor force of the city of Boston, the engineers find the prices ranging from $9.04 to $18.34 per thousand on the day labor work, whereas on the Metropolian work done by contract the highest price was $4.23 and the lowest $2.77.

Based on the number of brick laid, the difference between the day labor work of the city and the contract work of the Metropolitan Board is as noticeable as is the difference in cost. These items are particularly interesting when it is noted that upon the city work, taking the average for a whole week, the number of brick laid per mason per hour was as low as 13, and the largest number was 242, as against 94 and 570, respectively, upon the Metropolitan work. The highest number per hour for the average of an entire job done by the Sewer Division was 78, whereas the lowest average upon Metropolitan work was 165 and the highest 384.

The engineers show that to a considerable extent the excessive cost under city administration was due to the fact that sufficient work was not always presented to keep the masons busy, but taking material and labor costs into consideration, it appears that the total cost for brick masonry in the sewers was $30.75 per thousand brick and $18.45 per cubic yard of brick work on the basis of 600 brick to the yard.

$75.000 SEWER PIPE PLANT FOR DRESDEN.

At a meeting of the directors and stockholders of the newly organized Dresden Sewer Pipe Co., held in Zanesville, O., plans were made to erect a $75,000 sewer pipe plant in Dresden this summer, an industry that will employ between 150 and 200 men at good wages at the start, with every favorable indication of an increase in the force within a year after the plant has been in active operation.

The company was organized some six months ago, and incorporated, but the matter has been allowed to lay dormant ever since. With the outlook for business conditions as good as at present and the constant betterment of trade all over the country, the stockholders and directors decided that it was time to start the ball rolling, and they formulated many plans at the meeting, which was held in Attorney E. R. Meyer's office.

That the company means business is evidenced by the transfer of 36 acres in Dresden to the concern. Two of the deeds were filed in the county recorder's office, while another has been transferred, although not yet recorded.

Samuel F. Spencer and Stella Spencer, of Dresden, released their half interest in 24.30 acres to Chalmer D. Moore, the secretary of the company, the nominal consideration being $1. Frank Tingle sold to the company 5.08 acres and lots 12 and 45 in Smith's addition, the consideration named also being $1. Mr. Moore holds the deed to the balance, and this will be recorded within a few days.

The Dresden plant will be along the same lines as the one in Junction City. Lee Humphrey, of Junction City, is the president of the concern, and C. D. Moore, the secretary, while a number of Zanesville and Dresden men hold stock in the enterprise. The plant will cover a large area.

With a force of nearly 200 men, the capacity of the plant will be enormous, but assurances of selling all the product have been received from many quarters, and it is stated, that all sizes of pipe will be manufactured.

The plant wil be Dresden's largest industry when once fairly started, and Dresden residents will learn with pleasure that plans are already formulated for building.

THE FOUR HASTINGS BRICK YARDS BUSY.

The Hastings (Nebr.) brick yards are planning for a larger output of brick this season than last. One of the management at the office of the Western Brick Co. says that they would aim to manufacture one million more brick this year over last season's output.

Last year this yard manufactured 5,000,000 and at this time this entire product has been practically sold. This yard has set the total output for this year at 6,000,000.

The two yards of Polenske, Schellak & Co. and Polenske Brothers & Co. last year manufactured a total output of 12,000,000. This year they will employ about eighty brickmakers and will strive to also increase the output over last year. These two yards also had a big demand for their brick and save some paving brick have but very few of last year's brick on hand. The management at both yards said they anticipated a big building demand for brick the balance of the season.

The yard of P. Hemple & Co., last year manufactured about 2,500,000 and Mr. Hemple says that he also would aim to have a larger output this year for the market. He thought the building outlookfor the year was very bright.

The Portsmouth (O.) Paving Brick Co., is erecting a new dry house and new kilns of modern type. The increase of business made this necessary.

The Auburn Shale Brick Co., have started in the manufacture of brick, in their Gettsburg, Pa., plant. The plant has been greatly improved and all the machinery overhauled.

POTTERS ARE CONSERVATVIE IN CONSIDERING RESOLUTIONS.

Atlantic City, July 7.—At the convention of Brotherhood of Potters, of the twenty-three resolutions that were considered only five were adopted.

Of the resolutions adopted the first one came from Tiffin, O. It provides that formal request shall be made upon the United States Potters' Association that the Association file with the Secretary of the Brotherhood a list of the propositions to be presented to the workingmen at least 30 days prior to the coming together of the next conference committees. The vote was unanimous.

The second resolution came from the Turners and Handlers of East Liverpool. It abolishes the custom of locals charging 10 cents for transfer and withdrawal cards. Before the resolution was adopted it was amended upon motion of Brother Ralph Wood, of Tiffin, that the National organization furnish transfer and withdrawal cards to local unions free. The amendment carried. The adoption of this resolution killed the one offered by Local Union No. 28, of Kokomo, which covered the same ground.

The third resolution came from the Claymakers of the west. It provides for the dipping of sacks by the firm; no price increase is involved in this concession.

The fourth resolution came from one of the general ware pressers' locals. It provided that no sanitary presser should be permitted to start at general ware pressing as long as a competent general ware presser could be secured to fill such vacancy. Two reports were submitted to the convention on this resolution, a minority and a majority report. The minority report was sustained. This gives any sanitary presser the right to accept employment in the general ware line when he cannot find employment at his own work. There was considerable discussion on the question before it was finally settled. The resolution in its original form came from Kittanning.

The fifth resolution was adopted without the suspicion of opposition.

It provides that the time the apprentice sanitary worker consumes in sticking up shall be deducted from his apprenticeship.

A communication was read from W. E. Wells, secretary of the Labor Day committee of the United States Potters' association, requesting that the committee appointed by the president to represent the workingmen at the next wage conference, be empowered to make a final settlement. He stated that the manufacturers' representatives would go so instructed but such power would be of no avail if the workmen's committee were also so fortified. The request was readily acceded to.

NEW YORK BRICK DEMAND BETTER.

Eyes of builders are on the brick quotation boards almost unceasingly these days. The dry, warm weather of the last few days has stimulated building activities here, and in consequence the supply which piled up at the local wharves met with a gluttonous demand. The yards are nearly drained, and there is said to be a tendency on the part of the manufacturers to hold in so as to maintain a good demand.

The consensus of opinion among brick dealers and consumers is that buyers who hold back for lower prices will not profit, as the present prices are bottom, and will remain so for some time.

The prices current for Hudson commons, for the week just closing, range from $3.25 to $6.50, which is a 25 per cent. advance over the low quotation of last week. Maximum prices for this brick remain the same. Light hards were quoted, however, at $3.50 and $4, which is a 50 cent drop low and 25 cents for high. Jersey hards range between $6 and $6.50.

ARKANSAS BRICK MANUFACTURERS MEET.

The Brick Makers' Association of Arkansas met in annual convention at Ft. Smith, June 22, 1909.

The meeting was held in the rooms of the Commercial Club of that city, the president, Mr. M. C. Burke of that city, presiding. A fair attendance of the members was present, all the membership being comprised of brick makers of the state of Arkansas and the northern portion of Louisiana.

Among other business transacted was the passage of the resolution extending the bounds of the membership to include certain portions of Oklahoma, Louisiana and Texas, which are adjacent to the state of Arkansas. Such brick makers were invited to unite with this association should they so desire.

A part of the time of the convention was spent in the inspection of the large paving brick plant of the Burke Bros. Brick company.

Much routine business was disposed of by the members present.

A reminiscence address was given by the Hon. Harry E. Kelley of Ft. Smith, who was one of the pioneer brick makers in this state.

An invitation to hold the next meeting in February or March, 1910, in Little Rock, was accepted.

Officers and Executive Committees were re-elected for the ensuing term. M. C. Burke, of this city, was re-elected president, on recognition of the effective work he has done during the past year in the interests of the association.

The other officers chosen were:

M. L. Case, Pine Bluff, first vice president.

N. P. O'Neal, Hope, second vice president.

C. E. Taylor, Little Rock, secretary and treasurer.

An executive committee was also selected, consisting of: O. C. Sutton, Mariana; C. W. Clark, Malvern; B. C. Poincey, Helena; M. W. Dickinson, Little Rock; A. Brewster, Peria, and C. N. Adams, Alexandria, La.

The convention adopted resolutions expressing their appreciation of the courtesies shown while in the city. M. C. Burke and D. J. Young gave their personal supervision to the entertainment of the guests.

DENVER FIRE CLAY CO. HAS BEEN REORGANIZED.

John Donaldson, formerly of Minneapolis, Minn., now of Denver, and Willis W. Case, Jr. of Denver, have purchased a controlling interest in the Denver Fire Clay company. Mr. Case has been elected president and manager, and Mr. Donaldson secretary and treasurer. W. W. Case, Sr., who has been the company's president for years, retired and will devote his time to his private interests. He still holds stock in the company.

Willis W. Case, Jr., the new president of the company, has been its manager for about a year. In that time he has increased the business greatly. About three months ago he opened a branch house in Salt Lake City, which he made a financial success from the start. Mr. Case is yet in his twenties.

John Donaldson comes from one of the best known families of Minnesota. For years the Donaldsons had a big department store, known as the Glass Block, in Minnesota. Mr. Donaldson is wealthy in his own right. He has been mining in Mexico recently, but will now make Denver his permanent headquarters and devote all his time to the business of the Fire Clay Company.

The Denver Fire Clay company is capitalized at $200,000 and invoices at more than $500,000. It is the only fire clay concern in the world that manufactures a complete line of chemists' and assayers' supplies.

WILL DEVELOP LAND NEAR BESSEMER.

Bessemer, Ala.—H. W. Sweet, vice president and organizer of the Eureka Fire Clay Brick company, is elated over the prospects of the company and some interesting facts in regard to the holdings of the company at Ricker. Mr. Sweet said:

"We hold approximately 40 acres at Ricker, about 18 miles from Bessemer, located on the Louisville and Nashville and very near the forks of the Bessemer-Brookwood-Tuscaloosa road. It is an ideal spot for the building of a city, lying at the meeting point of three of the county's principal roads. We have a large and commodious commissary already built with accommodations for the family of the storekeeper. We intend to put in at an early date about a $4,000 stock of groceries and general merchandise, and expect to get the trade of the country round about.

"Arrangements have been made with the railroad for putting in a switch, and we hold a permit to establish a station. The 40 acres have practically a bottomless layer of fire clay under a strata of three to seven feet of loamy sand, which will be no trouble to remove. There is a large sulphur spring within 200 yards of the land, which also contains a large deposit of potter's clay, which has been tested and pronounced good by experts. We expect to begin operations at once and hope to be in full operation by the end of July."

DIFFERENCES AIRED IN ORGANIZATION OF CONSERVATION COMMISSION.

Des Moines, Ia.—At the first meeting of the conservation commission it developed that there is a war on between the cement and clay men over the selection of the permanent chairman. The clay men want G. G. Wheat of Emmettsburg selected. The cement men claim Wheat has always fought their interests. They have no candidate of their own and will be satisfied with anyone but Wheat.

The commission elected A. L. Miller, cashier of the Home Savings bank of this ctiy permanent chairman, and J. W. Keerl, a member of the commission as temporary secretary. The law authorizes the selection of a secretary from outside the membership of the commission at a salary of $1,500 a year for all his time. A committee of two was appointed to canvass the situation and recommend a secretary.

The law creating the commission is broad and it was discovered that there is much variance in the opinon of the members as to their duties. It was decided to leave the arrangement of a program of work till a later meeting to give the members time to examine the law more carefully. The next meeting will be held at the call of the chairman, probably September 1.

Ex-Deputy State Auditor Amos Brandt, Ex-Deputy Secretary of State Dan A. Hites, Robert Bailey, L. W. McHenry, all of Des Moines, and G. G. Wheat of Emmettsburg are candidates for secretary.

FIVE-YEAR BRICK RATES LOWERED.

The Chicago Board of Underwriters has reduced the five-year term rate on brick dwellings and stables to 90 cents, the minimum tariff having provided that no five-year rate should be less than $1. As the annual rate is 30 cents, the five-year rate under the ordinary rule of three rates for five years, would be 90 cents were it not for the $1 limit. Some mathematician figured out that by insuring for four years and 364 days a considerably lower rate could be gotten than for five years, and to correct this discrepancy the change was made.

GIMBELS NEW YORK STORE STARTS UP A BIG NEW JERSEY PLANT.

The National Fireproofing Company, of Pittsburg, has obtained the contract for fireproofing the new Gimbel store, one of the largest fireproofing contracts ever awarded in New York city. The store is at Broadway, Thirty-second and Thirty-third streets, just in front of the new Pennsylvania railroad station.

The fireproofing contract calls for 1,500,000 square feet of hollow terra cotta blocks. Laid end to end, the blocks required for this one job would stretch 285 miles, two-thirds of the distance from New York to Pittsburg.

The company will at once start up one of its New Jersey plants, which has not been in operation recently, and set 600 men to work manufacturing the hollow blocks. The installation of the fireproofing in the building will probably begin in about three months.

The very large New York undertaking is proving a quickening influence in many lines of business.

The excavation for basements and foundation is rather more than half done. Three shifts of men keep the dirt and rock flying, and each day's work equals the total excavation for the average New York building. The erection of steel will start September 3.

VICTIMS OF FEVER AT WASHBURN'S BEING WELL CARED FOR.

The condition of the fever patients at Washburn's brick yard, East Kingston, N. Y., is improving and indications are that there will be no fatalities. Only one patient, a little girl, shows any symptoms of typhoid fever, which are slight.

There are now about 32 fever patients, several having been discharged as cured. George Washburn, is doing everything that is possible for the care of the patients, an extensive hospital camp having been laid out with Dr. E. H. Loughran, who is health officer of the town of Ulster in charge. The colored men who are patients are in tents by themselves and the white patients in separate tents. There are no women afflicted with the fever, the cause for which seems to puzzle the doctors. There is a cook tent with a competent cook, while three trained nurses, Miss Mary Hamburger being head nurse. The hospital camp is kept in perfect neatness. Every precaution is being taken to stop the epidemic and prevent the spread of the fever.

A similar fever, from what men who came to the brick yards asking for work, said, is also raging at up-the-river points, there being about 40 cases near Hudson.

Great credit is due Mr. Washburn for his prompt steps in having the camp established, engaging trained nurses, etc., and seeing that the wants of the sick people are being carefully attended to.

POTTERS PAY EXPENSES FOR CAMP MEETING

Sebring, Ohio.—The annual camp meeting held by the Sebring Brothers, builders of the town bearing their name, opened July 23.

The Sebring Brothers came here eight years ago from East Liverpool (there were five of them then) and after purchasing a large area of poor ground from the farmers who thought the strangers wanted to raise stock, built the thriving little pottery town which now has 3,500 population, no saloons and several factories in addition to the four china potteries.

One of the peculiarities of the town is that everyone buying property from the Sebrings finds a clause in the deed specifying that no liqour shall ever be sold on the premises, so that the town has always and always will be dry. Camp meetings are held every year in a special tract of land set aside and equipped by the Sebrings for the purpose.

SAND OR LIME BRICK OR BLOCK NEWS

The Kentucky Unit Brick & Tile Co. has been organized at Louisville, Ky., with $90,000 capital stock. The incorporators are S. D. Atkisson, I. R. Jeffers and D. Price. They will manufacture brick and tile of cement under the Sawyer system which was first started at Charlotte, N. C.

J. R. Ingraham and others have purchased four acres of land near Turner, Kansas, and will establish a sand pressed brick works. The Kaw river sand will be used.

The officers of the Denbigh (N. Dak.) Brick Co. are having trouble to supply all the orders for sand and lime brick that are coming in to them.

The Tri-city Sandstone Brick Co., Moline, Ill., has surrendered its charter and asks for a dissolution.

The Charleston (Mo.) Tiling Co. is turning out cement tile up to 24 inches, having modern tile machine. J. I. Belote is the able manager.

The tile and cement block factory of M. R. Corbett, East Main St., Pana, Ill., is opened for business. A specialty will be made of drainage tile.

Excavations have been started on Vogel's Island, Milwaukee, Wis., for the $10,000 factory for the Wisconsin Composite Brick Co., the city office of which is at 3rd and Grand Ave.

The Granite Brick Co., Norfolk, Va., took 75 men of Norfolk down to their brick manufacturing plant, where $90,000 has been invested, for inspection. R. C. Marks is president of the company and R. C. Marks, Jr., secretary and treasurer.

The Owensboro (Ky.) Sandlime Brick Co. is doing a good business these days. The company was started by local men and capital and the product is sent in all sections of the country.

The Hydraulic Stone & Brick Co. plant at West Bend, Wis., is working full time with an enlarged force since it changed hands and is owned by Merrit H. Evans, of Minneapolis, Minn. Wm. Capelle, an experienced brick chemist, has full charge of the plant.

POTTERY NEWS ITEMS

The New Lambertville (N. J.) Pottery has been put in motion.

An order has been issued by A. M. Moreland, of Pittsburg, Pa., to raise the buildings known as the Union Pottery Co. plant at East Liverpool, O., on account of they being considered unsafe.

The receiver for the Bell Pottery Co., of E. Columbus, O., has been ordered to sell the property at an upset price of $90,000.

The International Art Studios has been organized at Cannelton, Ind., with $30,000 capital stock by William Frances Keates and others. They will manufacture fine chinaware.

H. F. & L. C. Pumphrey, of Fairfield, Ia., will establish a pottery in that city.

The Leavenworth (Kansas) Brick Works have been started by their new owners. J. S. Bowley of Atchison, is the practical brick manufacturer, who is putting the plant into shape. Additional machinery will be installed, new kilns built and the dryer enlarged to a 32 track dryer. The present machinery and boilers have already been overhauled. They have visited governors as well as laymen and their efforts must produce results.

MISCELLANEOUS ITEMS

The Pima Brick & Tile Co., Tuscon, Arizona, has three plants at that place, and are negotiating with machinery manufacturers for the purchase of machinery to make 40,000 brick daily. Louis De Vry is president.

The Libby Pressed Brick & Tile Co. has been incorporated at Pierre, S. Dak., with $75,000 capital stock.

The Utah Fire Clay Co., Salt Lake City, has increased its capital stock from $200,000 to $500,000.

The Fire Stone Brick Co., Lexington, N. C., has been incorporated with $50,000 capital stock by J. M. Pugh, J. T. Gumear and S. E. Williams.

T. B. Wright & C. J. Bowell have formed the Independent Builders' Supply Co. at Shenandoah, Ia., and will deal in all kinds of building materials. They would be glad to receive catalogues and samples of all kinds.

The Dickman-Duty Brick Co., Cleveland, O., is making extensive improvements at its Collingwood plant that will cost over $30,000.

New York capitalists have organized a brick company and will erect a large plant at North Mountain, W. Va., starting some time in July. E. W. Mack, of St. Louis, Mo., is also interested.

H. H. Peterson will remove his brick plant from Holtville, Cal., to El Centro. He has secured land near the Southern Pacific depot and will construct a power brick plant making 25,000 brick daily.

The Nebraska Drain Tile Co. has been organized at Tekamah, Nebr., capital $75,000. The buildings will be 160x60 and 40x80 feet. The plant will be equipped with a dryer and start with four kilns. All buildings will be of brick.

The Gary Sand Co., Michigan City, Ind., has been organized by John S. Field, Alexander Dahlman, C. B. Sheffler and N. C. Fisher.

The Burlington (Wis.) Brick & Tile Co., having nearly exhausted their present clay holdings, have purchased another track and can continue making their splendid tile.

The Utah Fire Clay Co., of Salt Lake City, has received an order for seven miles of vitrified pipe to be laid in that city. The work of laying same has been commenced.

The Bickford Fire Brick Co., Lock Haven, Pa., will increase its output to eight turns daily at its Curwensville plant and will double its force of men. The local plant expects to be busy the balance of the year.

The Eureka Fire Brick Works at Dunbar, Pa., report through its manager, H. Watson, that the demand for coke oven brick is improving and the plant is running to its fullest capacity.

It is understood that a company will be organized to manufacture brick at Poteau, Okla. J. J. Sabin is the present leasee of the plant.

The Vulcan Brick Co., Athens, N. Y., is putting in machinery and will have an up-to-date yard. Wm. E. Fitzgerald, of Hudson, is the manager of the yard.

The Lexington (Mo.) Press Brick Co. recently added a Fernholtz Dry Press to its already well equipped yard. It will greatly increase the capacity of the plant.

Batdorf & Co., Burlington, Kansas, will enlarge the capacity of their tile plant and will build another kiln of twice the capacity of any of the present kilns.

L. M. Frawley, manager of the Elk City (Kansas) Brick Co. has a 11 pound boy assistant manager, born June 12.

Independence, Kansas, is to have another brick plant located on the Page farm south of town. All the preliminary work has been done, the shale tested and gas contracted for.

Work has been started on the brick works at Lucasville, O., under the supervision of Mr. Oakes. They expect to be making brick in a short time.

The South Shore Ry. has completed the side track for the new brick plant at St. Ignace, Mich., to be built for the Northern Michigan Brick & Tile Co. by Calumet and Houghton people. E. A. Reavie, of Laurinum, is the manager.

The Wilipcoba Clay Works will make 100,000 brick daily at their plant at Ragland, Ala., soon as all the kilns are completed, four being in use now and two under construction. C. H. Pettman is general manager.

The Bloomdale (O.) Tile & Brick Co. has been incorporated with $150,000 capital stock by R. W. McPherson, M. L. Wiseley, O. F. Campbell, L. R. Good and J. M. Martin.

The Bippus (Ind.) Tile Co. has increased their capital stock $10,000, issuing preferred stock for same.

The New York Pressed Brick Co. will reopen its plant U. J. Matson will be the superintendent. The company will at Canandaigua, N. Y., and employ a large force of men. extend its work so as to manufacture roofing tile as well as all kinds of pressed brick.

Edward Smith, of Cherryvale, Kansas, has taken the management of the Midland Brick Co. at Sedan and has a force rebuilding the kilns and putting the plant in order.

Heyburn, Idaho, has a new brick works.

The Ivie Brick Works at Kirksville, Mo., has been purchased by a number of local business men and the plant will be completely overhauled and $10,000 expended to complete it.

The Hebron (N. Dak.) Pressed Brick Co. are now making glazed or enameled brick and making shipments as far west as Oregon.

Haigh's New System of Continuous Kiln **Arranged to Suit all Locations**

These Kilns can be seen burning Roofing Tile, Drain Tile, Dry Pressed Facing, Fire, Paving and Common Building Brick

Points of Superiority: Cheapness in construction. Easy to understaud and operate. Perfectly free from any nuisance. Will save more than one-half of the fuel used on other Kilns. Specially adapted for Utilizing Waste Heat for Drying Purposes, and which is being done most successfully

Address, H. HAIGH, Catskill, N. Y.

The Flint River Brick Co., N. J. Cruger president, will spend $60,000 on their Albany, Ga., brick plant this fall.

Porter Bros. & Co., Pittsburgh, Pa.. and Kenilworth (Newell P. O.), W. Va., will establish a brick plant at Weir.

The Eureka Fire Brick Co., Tuscaloosa, Ala., has been incorporated by James D. O'Grady, H. W. Sweet, G. Baugh and N. Hedge.

The Rainier (Oregon) Face Brick & Clay Co. has been incorporated with $25,000 capital stock. Incorporators are J. W. Bayliss, S. B. Bayliss and N. L. Nash.

The Blackwell (Okla.) Brick Tile & Gas Co. has been incorporated with $50,000 capital stock by J. W. Beatty, W. H. Thompson, Z. A. Harris, N. B. Kistler and W. M. Vickery.

Plans are under way for the installation of electric power at the works of the Menomonie (Wis.) Hydraulic Pressed Brick Co.; large motors will drive the machinery, taking the place of steam.

A company has been formed at Brownsville, Texas, for the purpose of building a brick and drain tile plant. The stockholders are N. Allen, G. D. Fairbanks, E. Von Antwerp and H. H. Bunker.

While locating coal in the hills near Jamestown, N. Dak., a large deposit of fine brick clay was found on the James river and Aberdeen parties have secured a lease and expect to build a large brick plant.

The Paragon Brick Co., Sheridan, Wyoming, has been incorporated with $50,000 capital stock. The directors are W. P. Waters, Wm. H. Huntley, Fred H. Blume, L. B. Glafcke and E. C. Hecox.

The Kalona (Iowa) Tile Works, which recently burned the first kiln of tile under the new management are so satisfied with results that they will remodel the old plant and install new machinery in the near future.

The Atlantic Tiling Co. has broken ground for their large plant at Perth Amboy, N. J. A tract, 500x200, has been secured near the heart of the city. They will be one of the largest wall tile producers in the States.

Dr. John B. Sewell, Baldwin, La., has burned his first test kiln of brick at his works in Bayou Teche, and they are satisfactory. The brick are hand made but the doctor expects to get improved machinery and make brick by modern methods.

The La Rue (O.) Tile Co. has been incorporated with $50,000 capital stock by C. McAllister and others.

J. R. Neal, of Portland, Oregon, is testing clays at Ridgefield, Wash., with the view of building an up-to-date brick yard.

J. A. Johnson, of Ontario, has found a rich body of clay near Prince Rupert, B. C., also sand and expects to develop it.

R. M. Bachus is making 1,000,000 brick at Gifford, Idaho. The demand for brick has never been so great since the plant was started.

J. R. Ingraham and others have purchased four acres of land near Turner, Kansas, and will establish a pressed brick yard. The Kaw river sand will be used.

The Sioux City (Ia.) Brick & Tile Works has purchased a large motor truck, which will be used in the future instead of horses, to haul brick for delivery in the city.

Senator Fred W. Gooding has ordered the machinery, cleared the land and laid water pipes to his new brick yard near Shoshone, Idaho. The yard will turn out 20,000 brick daily.

At Correctionville, Iowa, the Cherry Red Pressed Brick Co. is issuing $25,000 bonds for the purpose of making extensive improvements to the plant. G. A. Bailey is president, G. N. Fairchild, of Sioux City, is an officer of the company.

The formation of a $100,000 company has been organized by George F. Atkins as president, Dr. C. F. Wilcox, vice president, Dr. E. E. Wilcox, treasurer, and Attorney W. W. Little, secretary. They will exploit Dry Canyon at Salt Lake City, Utah. Samples of silica brick have already been made, and it is expected to build a fire brick plant.

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COLUMBIA CLAY WORKS

Entire Sewer Pipe Plant and Clay Mine, located near Columbia, Ill., being only 14 miles from St. Louis, on Mobile & Ohio R. R.
Private Switch and Locomotive.
Unlimited Supply of Clay.
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All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue W. C.

American Process Co.,
68 William St. NEW YORK CITY

The Carrollton (Ky.) Brick Co. has been organized with $60,000 capital stock.

The Checotah (Okla.) Business League is negotiating with parties to start a brick works at that place.

Deming, N. Mex., has a new brick plant which will employ 15 men. Heretofore all brick were shipped in.

The Weir City (Kansas) Brick Co. has closed a contract for 1,000,000 brick for Drury College at Springfield, Mo.

M. J. Lee, of Crawfordsville, Ind., has purchased The Paola (Kansas) Brick & Tile Works and will double its capacity.

E. E. Seniff, a Pittsburg, Kansas, contractor, has become the owner of a brick plant at Leesville, La. George Barney formerly owned the plant.

The Denver (Colo.) Fire Clay Co. has been reorganized and purchased by W. W. Case, Jr., who is president and John Donaldson secretary and treasurer.

At a meeting of the directors of the Dresden Sewer Pipe Co., held in Zanesville, O., plans were made to erect a $75,000 plant at Dresden. Lee Humphrey, of Junction City, is the president and C. D. Moore, secretary.

Work on the $250,000 fire brick and clay products plant of the Harbison-Walker Refractories Co., near Ensley, Ala., is being rushed as rapidly as possible. It is expected the plant will be put in operation September 1st.

A third vitrified brick plant is now proposed to be built at Independence, Kansas. This one will be on the Parkhurst land near the Santa Fe Ry. The land costing $300 per acre.

A company has been organized with $20,000 capital stock to manufacture brick and tile at Albia, Iowa.

The Ardmore (Okla.) Brick & Tile Co. is now running its plant to its fullest capacity, making 100,000 brick daily.

The E. E. Meyer Tile & Brick Works at Crescent City, Ill., has undergone complete renovation and rebuilding.

The East Peoria (Ill.) Brick Co. has closed a contract for 1,000,000 brick for the construction of the new Jefferson building.

The Brooklyn (N. Y.) Vitrified Tile Works has had all its capital stock paid in. The directors are Edward A. Merdian, William Chell and Osler J. Villy.

A. B. Day and M. W. Havey have bought the S. J. Campbell brick yard and saw mill at Independence, La., and intend doing a large brick and lumber business.

C. R. Richards, proprietor of the Richards Brick & Tile Works at Clyde, O., says he will dismantle the plant soon. He is also interested in the Clyde Brick & Tile Works, so he will still be in the business.

The Madisonville (Ky.) Drain Tile Co. has been incorporated with $10,000 capital stock by L. W. Schmetzer, of Madisonville, and J. D. Bobbett and Ida W. Bobbett, of Nebo. The plant is at Nebo.

The Alexandria (Va.) Pepress Brick Machine Mfg. Co. has been organized with $25,000 capital stock. Edwin L. Cockrell is president, David N. Rust, Jr., vice president and treasurer, Wm. R. Stone, Jr., secretary and manager.

25 Per Cent Discount
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FOR THIRTY DAYS
BIG STOCK
IMMEDIATE SHIPMENT
Scott Manufacturing Co.,
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Oue power Repress, in number one condition, used only but a short time; capacity 10000 per day. Ask for full particulars.

American Enameled Brick & Tile Co.
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POSITION WANTED

By an up-to-date man as manager or Supt. of paviug brick plant, thoroughly practical and experienced in every detail of the business, plant construction, kiln building, and handling all classes of labor. A1 references. Address B 4
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Second-Hand Brick Machinery For Sale

1 two-mold brick press.
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Let us know your wants.

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Brick Plant for Sale or Lease

A cenveniently located brick plant on the main channel of the James River, 90 miles from Richmond, 18 miles to Newport News, and 40 miles to Norfolk, all having a good steady market for brick. Easy transportation for large boats. Want to see plant in operation. Therefore would make very easy terms. Address MRS. AGNES L. TURNER,
Ferguson's Wharf, James River, Va.

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Profitable brick plant and business; 20,000 capacitv. 4-mold Boyd press; complete equipment. Splendid reputation. Economical situation. Supplies this section; no competition; a money-making plant. Owners have no other interests.

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Durango, Colo.

FOR SALE OR LEASE

A southern Minnesota Brick and Tile Plant, complete in running order; has done a good business last year. Good reason for selling. Address
Minnesota, care Clay Record,
Chicago, Ill.

FOR SALE

One No. 20 Cyclone Disintegrator, made by the C. W. Raymond Co, Has been used about two weeks. Practically new. Address
COLUMBIA BRICK & PLASTER CO.
North East. Md.

POSITION WANTED

As general superintendent or general manager of a large brick works or the construction of such. Have twenty years practical experience and thorough knowledge of the business.
Address Brick Supt.,
P. O. Box 81, Coffeyville, Kans.

WANTED

A first-class Engineer who can handle a corliss engine and look after machinery in brick plant. Must be a man of ability, later full charge of plant will be given to him if satisfactor. Will pay $900 a year to start.
Address "B E" Care of Clay Record, Chicago.

WANTED

One second-hand medium size steam shovel for handliug clay or sand.
Address E. J. KELLER,
Lexington, Okla.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE

Brick and tile plant; coal and potters' clay mine; all combined in active operation; new machinery, none better; coal and clay, unlimited quantity; superior in quality; suitable for fire brick, enamel brick or fine face brick, terra cotta, tile, sewer pipe, stone ware; and all high refractory material. As to proportion of strata used, it is 25 ft. thick rock top and easy to mine. Clays burn white, buff, gray, brown, and also makes a fine spreckled manganese brick. As to proportion of clay used—best clay in Illinois. Railroad runs direct through center of 900 acres; direct to St. Louis and Chicago. Reason for sale, owner crippled; will sell on easy payments, trade for good real estate, or lease to good, experienced men with capital to operate and increase business: Address,

H. T. M.,
Care of Clay Record, Chicago.

FORCED FOR SALE

Brick yard for sale within six miles of Broad Street Station, Philadelphia, Pa., every improvement, Penn. Ry. siding into yard. In operation for orders for about three million brick. Address:

A. B. Co,
Care of Clay Record, Chicago.

SECOND HAND BRICK MACHINERY FOR SALE

8,000 new fire brick; 12,000 second hand fire brick.
140 single Grates as good as new, size 3 ft. 9 in.
18 Kiln doors on frames.
60 double Grates, size 3 ft.
10 plain fire doors.
5 Brick Trucks.
5 Brick Wheel Barrows.
One 40 H. P. Engine.
One 40 H. P. Boiler in good condition.
Several Pumps. One Bottom Dump Car. 800 ft. Small Rail. 2 Switches. 60 ft. 8 inch Canvas Belting. 52 ft. 6 inch Belting, used one year.
Address,

HENRY EHLERS & BRO.,
Watkins, Minn.

DRYER CARS

We have on hand a lot of secoud hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, Ohio

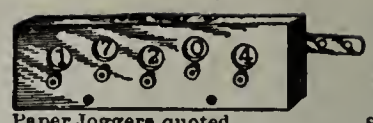
FOR SALE

One hardening cylinder, 72 ft. long, 6 ft. diameter.
One 4-Mold Andrus brick press.
One 9-foot Scott Dry Pan.
One Cedar Rapids Sand Dryer.
25 sand lime brick cars, 3 ft. by 5 ft. top.
2 transfer cars all in good condition.

MORGAN BRICK CO.
Norristown, Pa.

FOR SALE

150 Iron Flat Trucks for Cement, Tile or Brick Yard.
One 70-inch Buffalo Forge Fan.
One 180 H. P. Heine Boiler
Two Freight Elevators
The above machinery is in good condition and at a very low price. S. KRUG WRECKING CO.,
Nebraska City, Neb.



No better made, cut from $8 and $10, to
4-Wheel, $3.00
5 Wheel, $3.25
Guaranteed.
Sold by all dealers

Paper Joggers quoted.
R. A. HART, 41 White St., BATTLE CREEK, MICH

FOR SALE

One four-mold Ross-Keller Brick Press in good working condition. Has only been used one year.

Chisholm, Boyd & White Co.,
57th and Wallace Sts., Chicago.

PLANT FOR SALE

Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capabity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7.00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles Cheap fuel and labor; can operate with steam dryer year around. Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments

W. L. JONES,
Lock Box 5, Williamsburg, Va.

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick.
Address,

FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE OR LEASE

Clay products plant. Established business. Run ning concern in one of the best cities in Ohio

Address A. B. care Clay Record.
Chicago, Ill.

FOR SALE

I have a Brick and Tile Plant costing $20,000, Electric Power, Steam Dryer. Make soft mud and stiff mud brick and drain tile. I want a man with a few thousand dollars to take one-half interest in the business. If you are looking for a good chance to get into business by investing at 50 cents on the dollar, address

J. J. MILLER,
Benton Harbor, Mich.

FOR SALE CHEAP

One Bullick 100 H. P. Motor, one 9 foot Raymond Pug Mill, one 18 H.P. Gasoline Engine. All nearly new. Address

KIAMENSI CLAY CO.,
Newport Del.

FOR SALE

New Sand Lime Brick Hardening Cylinder, 6 feet diameter by 68 feet long. One removable head. Immediate shipment.

FRANKLIN BOILER WORKS CO.,
Troy, N. Y.

THE BOSS SYSTEM OF BURNING BRICK

Involves the ORIGINAL PRINCIPLE of applying AIR UNDER PRESSURE

Absolute control of heat in kiln. **Burns all first-class hard brick.**
Applies to any style of kiln. **40% reduction in fuel cost.**

JOHN C. BOSS, Monger Building, ELKHART, IND.
WRITE FOR CATALOG

Do Your Brick Turn White?
HERE IS THE REMEDY.
PRECIPITATED

Carbonate K.B. C.F.H. **of Barytes**

The only preventative for scum and discoloration on facing Brick and Terra Cotta; neutralizing the Sulphate of Lime in the Clay and Water.

Circulars and Particulars on Application.

GABRIEL & SCHALL
205 Pearl Street NEW YORK P. O. Box 1712

They Never Fade

Twenty long years of time and weather have tried out Ricketson's Famous Red Brick" Brand

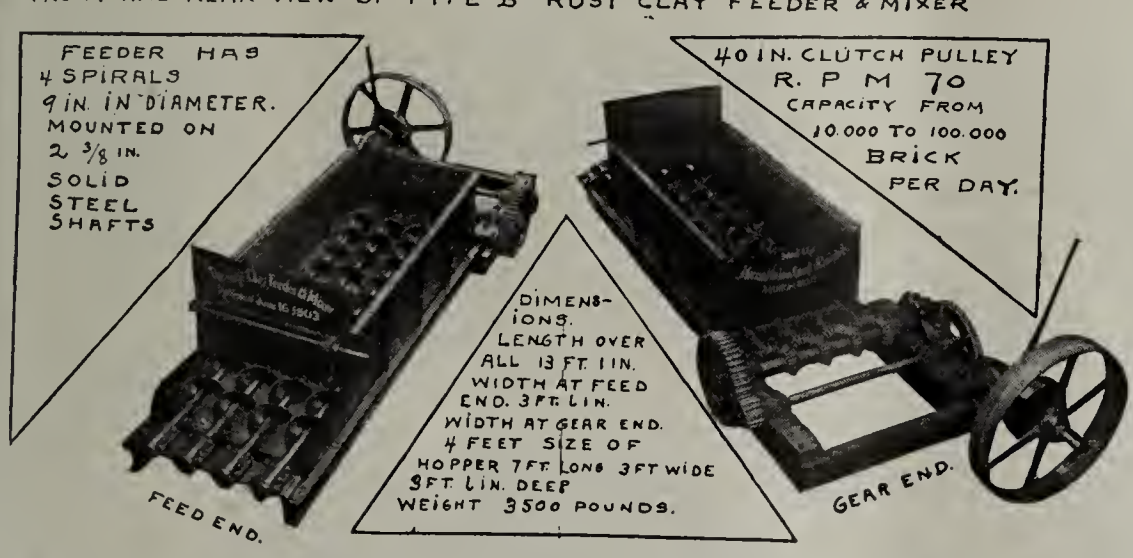
..COLOR..

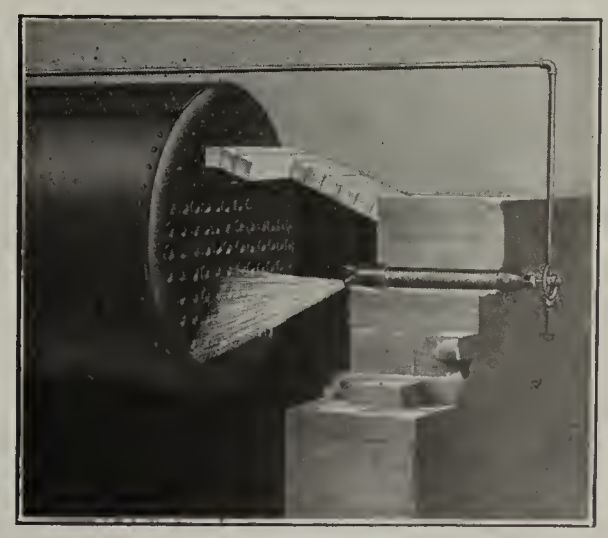
for Mortar, Brick, Cement, Stone, etc., Proves it Absolutely Permanent. Red, Brown, Buff, Purple, Black.

RICKETSON MINERAL PAINT WORKS
MILWAUKEE, WISCONSIN.

C. K. WILLIAMS & CO.
EASTON, PA.
BRICK AND MORTAR
COLORING

"FRONT AND REAR VIEW OF TYPE "B" RUST CLAY FEEDER & MIXER"





Don't Let Your Profits Run Away

We can save you from $500.00 to $1,000.00 per year, through the use of this modern Clay Feeder.

Write today for our latest catalog fully describing this new **Clay Feeder and Mixer.**

The Marion Flue Blower, (patented February 23 1909) will save 10 per cent of your fuel. It will insure you clean tubes; will prolong the life of the boiler; it will prevent the accumulation of soot; it will save the cost of steam hose; it will enable you to clean your boiler while in commision. The accompanying cut shows how the Flue Blower is installed in the rear wall of your boiler. Each blower is fitted with a nozzle which rotates, and each opening in the nozzle blows a section of the boiler tubes at a time We furnish different sizes as required, and positively guarantee to blow each flue clean.

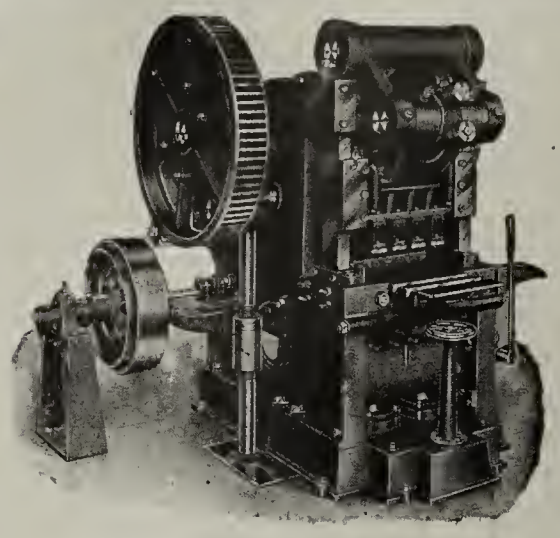
Please send for our latest catalog fully describing this useful invention.

MARION MACHINE FOUNDRY AND SUPPLY CO., - Marion, Inndiana

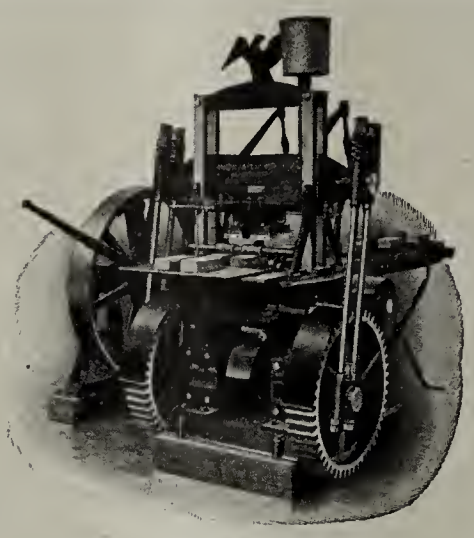
THE AMERICAN CLAY MACHINERY COMPANY

BUILT RIGHT RUN RIGHT

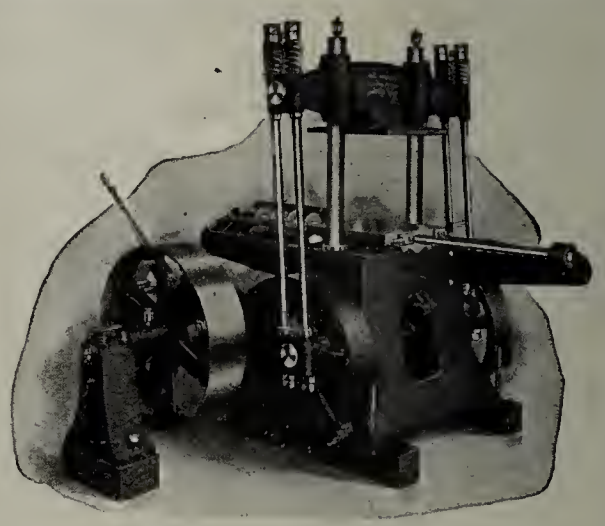
BUCYRUS OHIO, U.S.A.



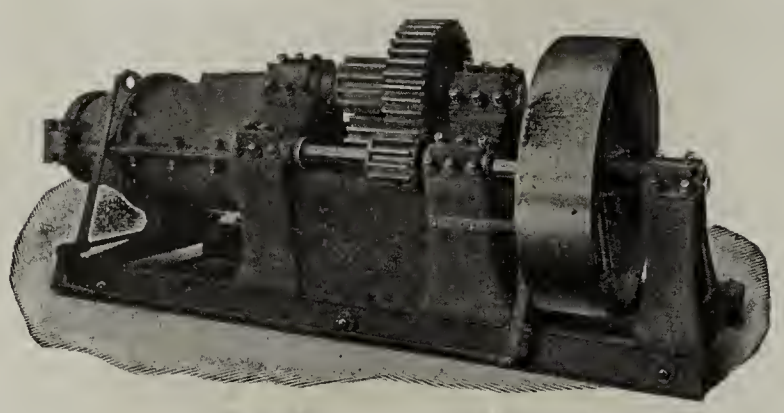
Model "B" Dry Press



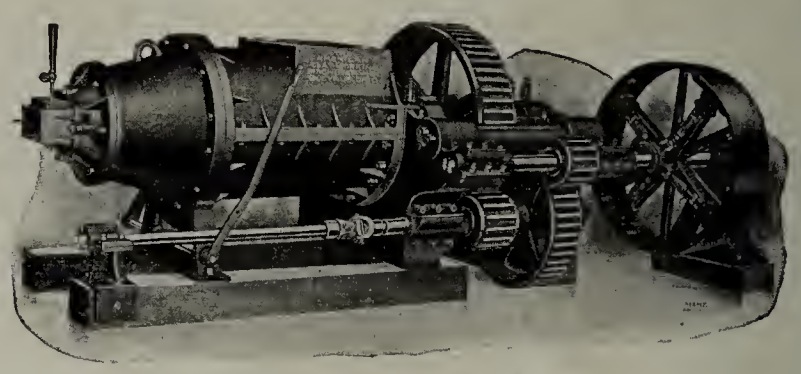
Eagle Repress



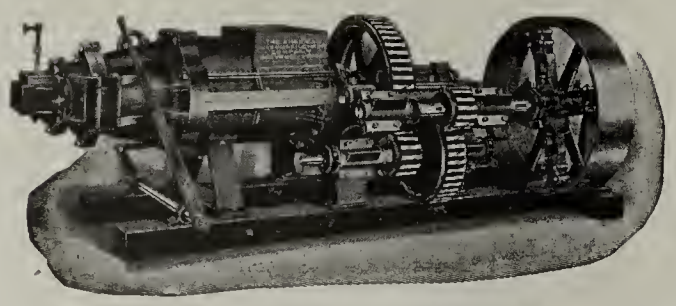
Roofing Tile Press



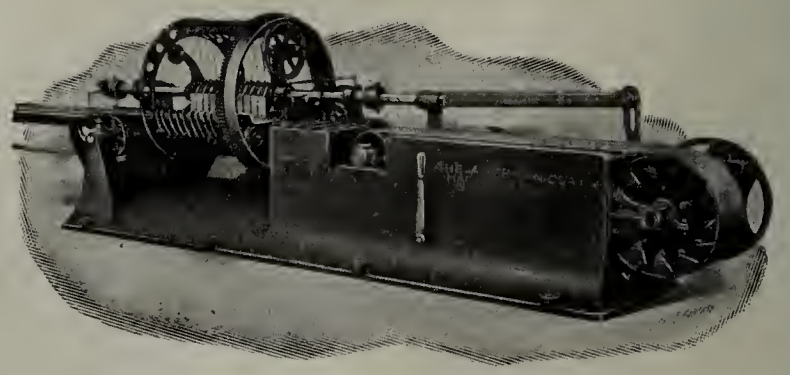
No. 65 Auger Brick Machine



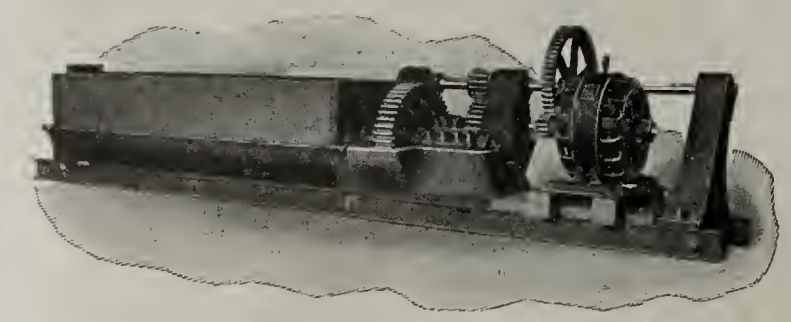
Special Giant Brick Machine



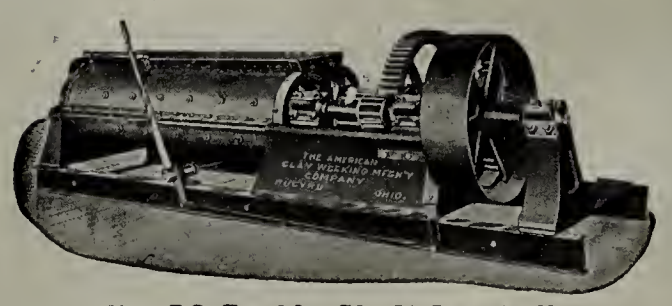
No. 2 Giant Brick Machine



No. 83 Automatic Cutter



No. 51 Electrical Driven Pug Mill



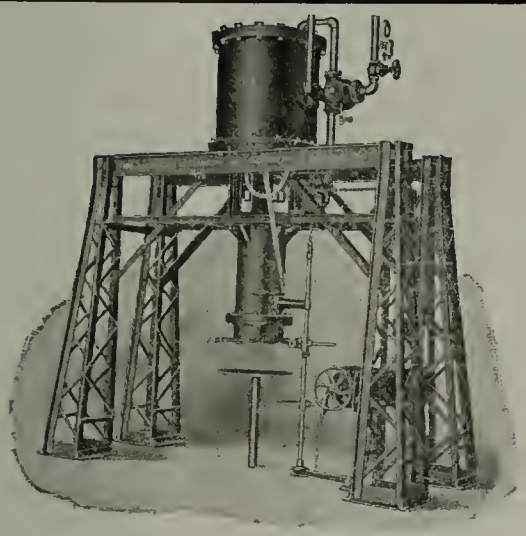
No. 38 Double Shaft Pug Mill

We Build Every Machine and Every Appliance Needed for the Manufacture of Every Class of Clay Products by Every Process

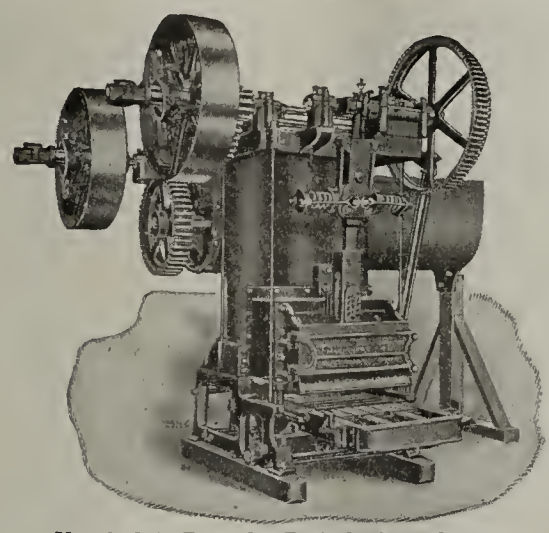
THE AMERICAN CLAY MACHINERY COMPANY

BUILT RIGHT RUN RIGHT

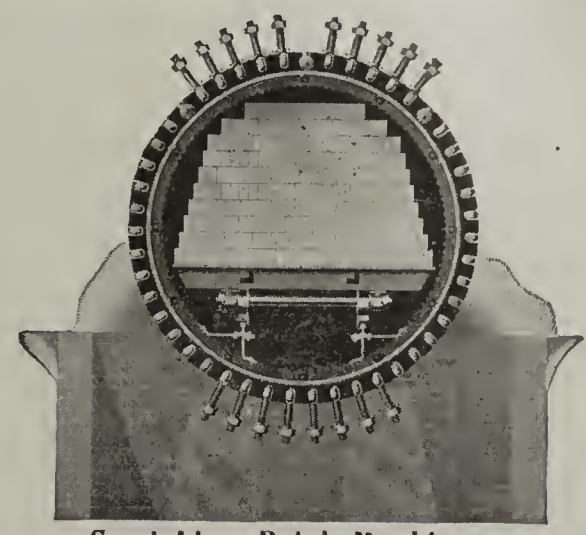
BUCYRUS OHIO, U.S.A.



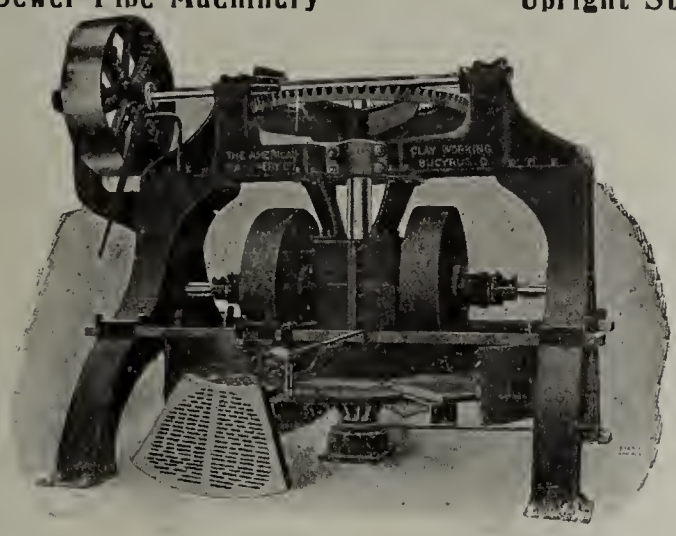
Sewer Pipe Machinery



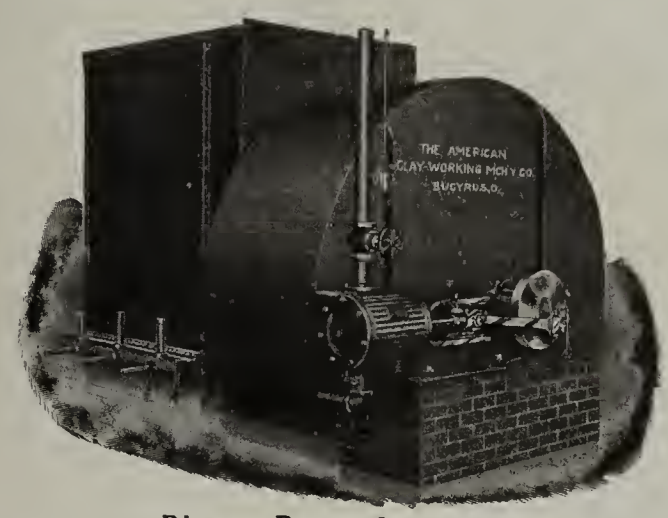
Upright Stock Brick Machine



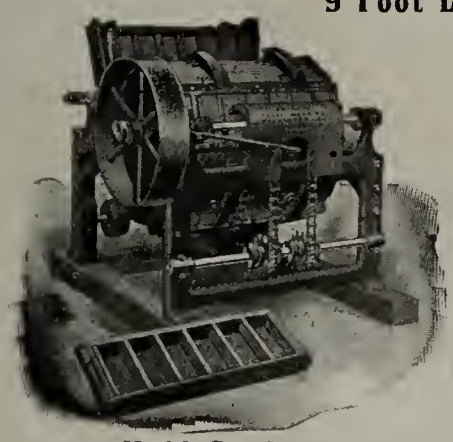
Sand-Lime Brick Machinery



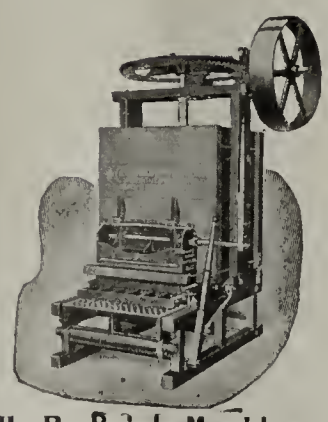
9 Foot Dry Pan



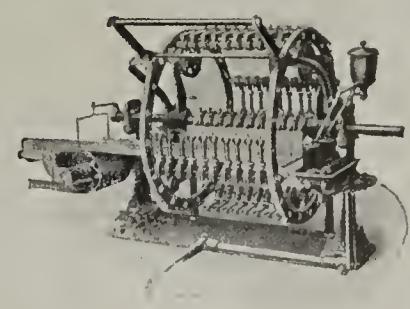
Blower Dryer Apparatus



Mold Sander



H. P. Brick Machine



No. 62 Hand Power Cutter

Dry Cars

Disintegrators

Winding Drums

We are Much the Largest and Much the Most Extensive Manufacturers of Much the Best Clay Working Machinery in the World

Fire Brick——Fire Clay

AND FIRE CLAY PRODUCTS

Manufactured out of highest grade Missouri semi-flint fire clay.
A large stock of Number One brick and shapes always on hand.
Let us quote you prices and we will save you money.
Samples sent upon request. Address

Mexico Brick & Fire Clay Co.

MEXICO, MISSOURI

Something New In Brick Kilns and Dryers

The Lennis Double Chamber Up and Down Draft Brick Kilns and Direct Heat and Hot Air Brick Dryers show many new features that make them superior to all others. Economical, durable and strong in construction and operation, having many points of dvantage that appeal to practical brickmakers. Patented April 14, 1903 and September 8, 1903 Brick plants installed and put in operation. Write for booklet. Correspondence solicited.

F. W. DENNIS,
145 Water St., Norfolk, Va.

Approved and Labeled

Fire! Fire!! Fire!!!

Extinguishers

Protect your Home, Business, Factory

Insurance Reduced. Child can Operate.
Made of Copper. Will Last a Lifetime.

Chemical charges can be procured at any drug store

Write today; don't wait; delays are dangerous.

O. J. Childs Company

Sole Manufacturers — Utica, N. Y.

AMERICAN RING-HAMMER PULVERIZER

Two Models, one for Clay, Shale, one for Rock

Will pulverize from 4 mesh to 200 mesh, 1 to 50 tons per hour, according to size of machine, fineness required, kind and condition of material.

30% to 60% less 3peed, and 25% to 50% less power, due to the RING and its utilization of CENTRIFUGAL FORCE.

We make six sizes and every machine guaranteed to do the work which it is contracted to do when sold.

Revolving Screens Air Separators
Ask for Circulars and Information

AMERICAN PULVERIZER CO.

Suite 410 Jaccard Bldg., ST. LOUIS, MO.

DISTRICT SALES OFFICES:
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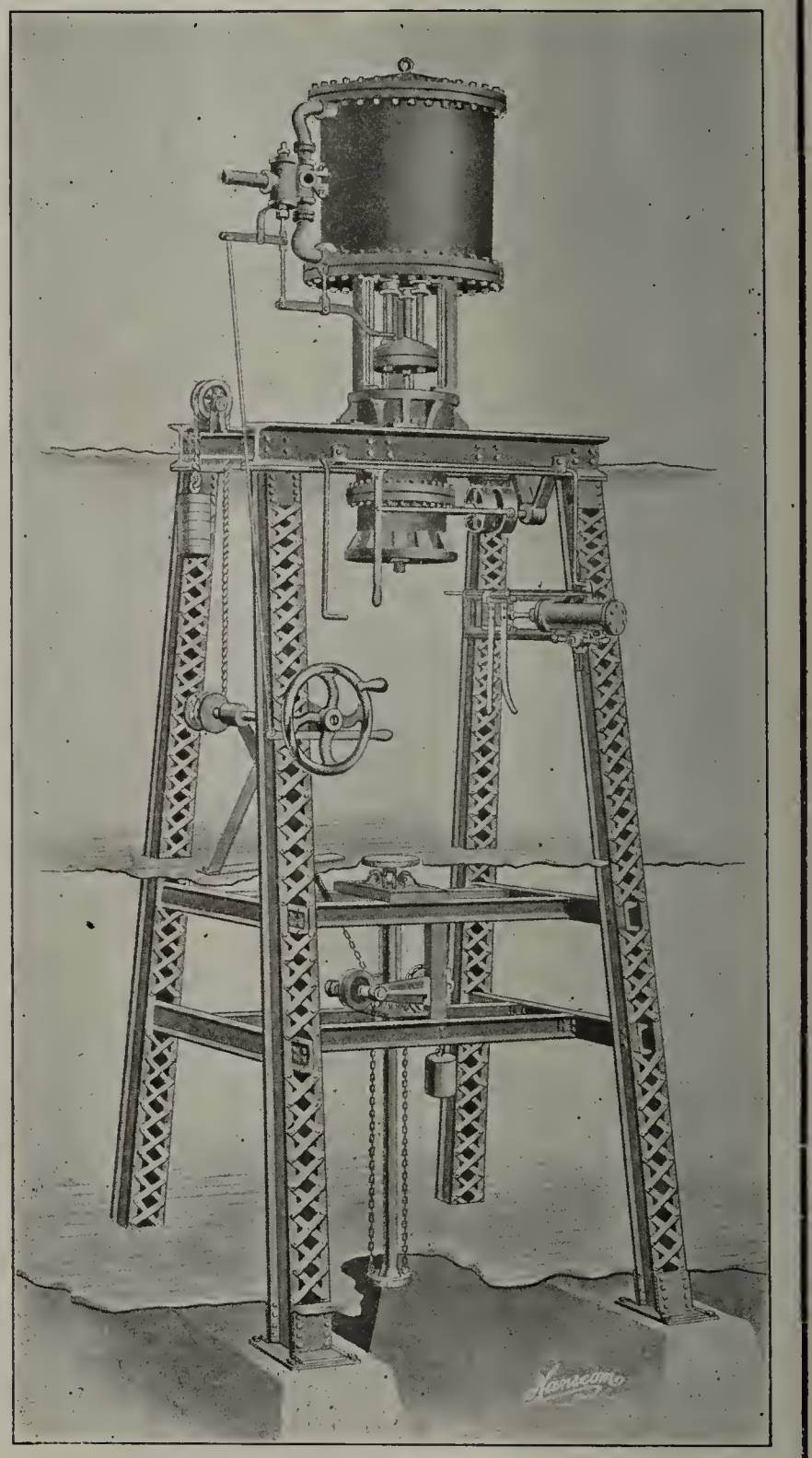
Lindrooth, Shubart & Co., Boston Bldg., Denver, Colo.



44 X 20 SEWER PIPE PRESS

SEWER-PIPE MACHINERY

COMPLETE EQUIPMENT

THE TURNER, VAUGHN & TAYLOR COMPANY

CUYAHOGA FALLS, O.

REBUILT ENGINES AND BOILERS

The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

ENGINES—Automatic—16x32 Buckeye, 15x14 Erie, 14¼x16 Buckeye, 14½x14 Ball & Wood, 13½x15 Taylor, 13x16 Erie, 12x14 Green, 12x12 N. Y. Safety, 10x10 Fisher, 9½x12 Leffel, 8x10 Allfree, etc.

ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

BOILERS—Stationary—72x18 High Pressure, 72x18 Standard, 72x16, 66x16, 60x20, 60x16, 54x16, 54x14, 54x12, 48x16, 48x14, 44x14, 40x12, 40x9, 36x16, 36x10, etc.

BOILERS—Fire Box—80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 h. p., etc.

BOILERS—Vertical—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 3 h. p., etc.

HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

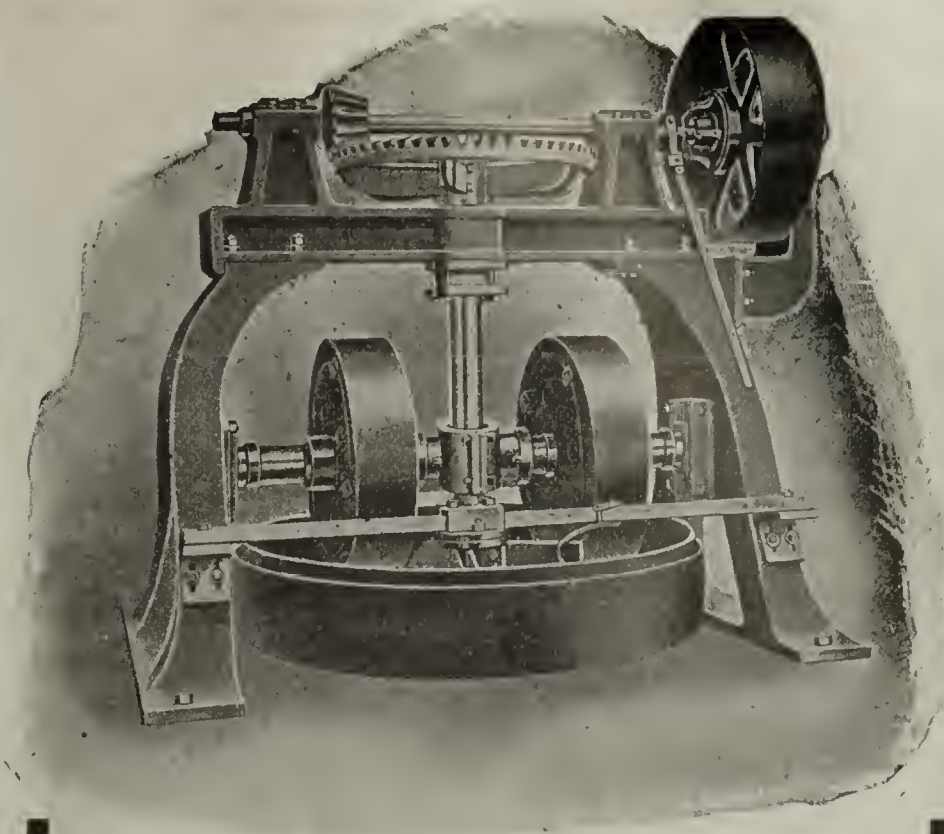
Saw Mills, Lath Mills, Edgers, Cut-Off Saws, Tanks, etc. Write for list.

Also full assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

The Randle Machinery Co.

1732 Powers Street **Cincinnati, Ohio**



PHILLIPS & McLAREN CO. PITTSBURG, PA.

BUILDERS OF

Pittsburgh Standard Dry and Wet, Revolving and Stationary Grinding Pans for Brick, Cement, Sand, Terra Cotta and all kinds of Refractory Materials.

ROCK AND ORE CRUSHERS

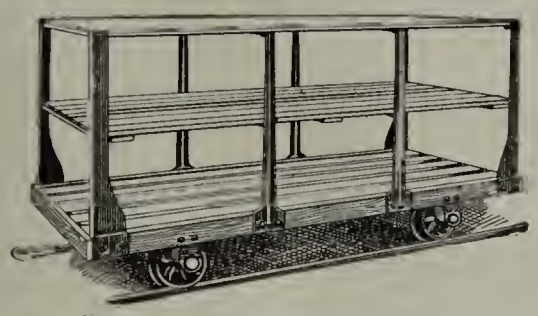
When writing for prices state kind of material and capacity required.

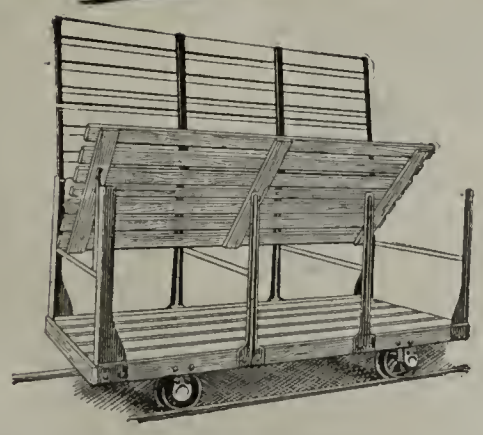
Eastern Offices

Stephen Girard Building, Philadelphia, Pa.

The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices





Vulcan Iron Works MASON CITY, IOWA

"A CHANGE IN FLUES MAKES THE DIFFERENCE IN DRYERS"

POTOMAC BRICK COMPANY

1413-G Street, N. W.

ELLIOTT S. MORSE, Gen. Mgr.

Washington, D. C., March 19, 1909.

THE KING ENGINEERING CO.,
Richmond Va

Gentlemen:—Our No. 1 10-tunnel Sharer Radiated heat dryer before it was remodeled by you gave us an average of 55 cars per day of dry brick.

You completed the reconstruction of this dryer the latter part of January last. This day we have examined our records and find that our daily average now is 80 cars dry brick.

Yours very truly,

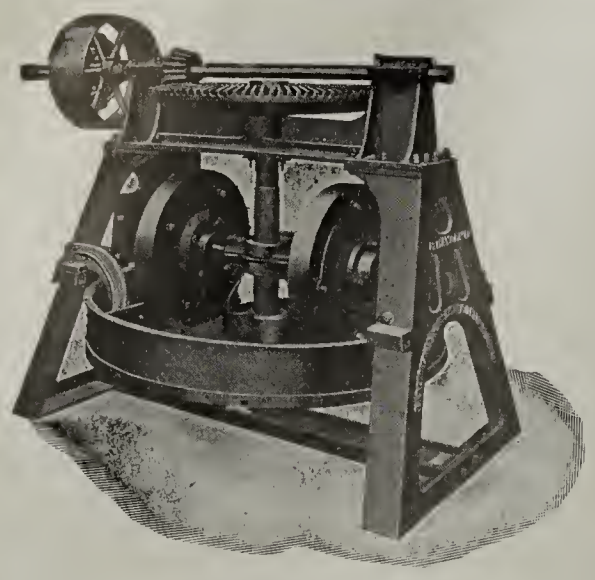
(Copy) ELLIOTT S. MORSE.

That which we have done for the above Company we can do for You. We can remodel any Radiated heat dryer and increase its capacity from 15 to 30 per cent.

THE KING ENGINEERING COMPANY

RICHMOND, VA.

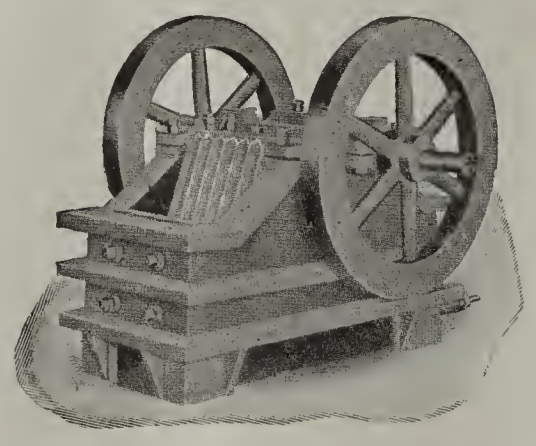
THE HAYDEN DRY PAN.



Masssive and well proportioned.
Best material.
Time tried and reliable.
Large capacity.
Acurate mechanism.
Independent or yoked mullers.

Send for specifications and prices before buying.

THE HAYDEN CLAY CRUSHER.



This Crusher is specially designed and adapted for use as an auxiliary to the dry pan.
Capacity 10 to 30 tons per hour.
Simply constructed and the strongest machine of the kind on the market.

Send for circular and prices.

THE HAYDEN
BRICK TESTING RATTLER

For testing paving brick.
Built to the standard specifications of the N. B. M. A.
Best material and workmanship.

Send for descriptive matter.

The P. HAYDEN S. H. CO., Foundry and Machine Dept.

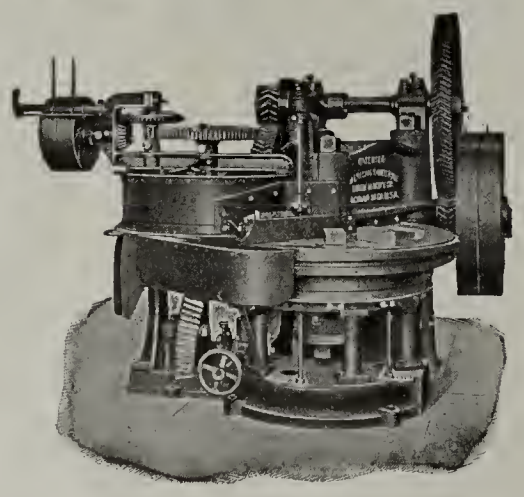
Manufacturers of

WET AND DRY PANS, CLAY CRUSHERS, STEAM CLAY PRESSES, RATTLERS, BRICK CARS, CARWHEELS, AXLES, KILN BANDS, etc.

112 West Broad Street **COLUMBUS, OHIO**

The American Sandstone Brick Machinery Co.

INCORPORATED APRIL, 1902
SAGINAW W. S., MICH.



Improved Saginaw Rotary Presses

Are now being built with extra table for making fancy brick, on which double pressure is exerted.

Don't confuse our Practical System with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant, starting and operating at our expense until at least 100,000 brick are made before asking for a settlement.

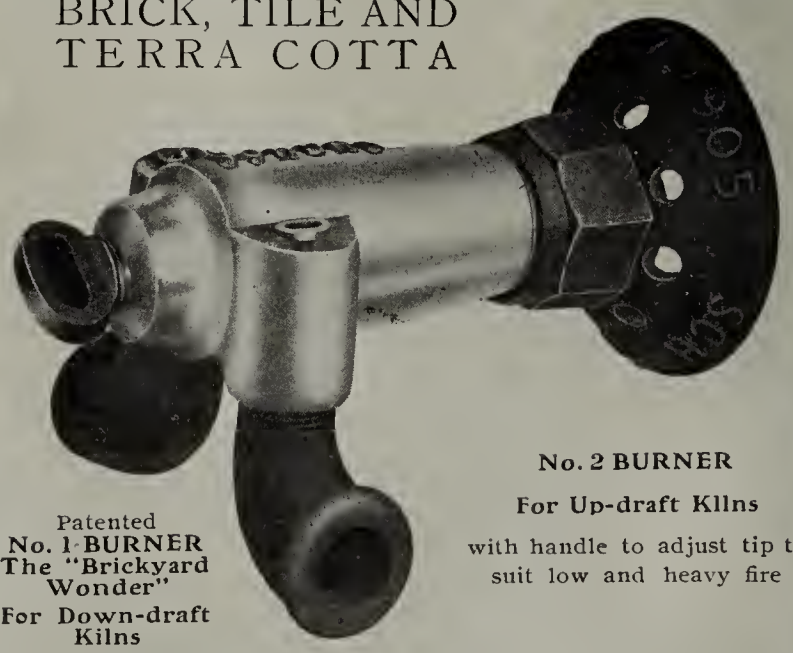
Our plants are **installed under the supervision of Practical Engineers who know how Sand-Lime Brick should be and can be made.** We have **Practical Plants Running Successfully** to show to prospective investors.

WE ARE NOT SCIENTISTS

We **Produce Results,** because we are the **Oldest Practical Sand-Lime Engineering Company Doing Business in the United States,** and we **defy contradiction.**

SCHURS Perfected Oil Burners

MOST ECONOMICAL BURNERS ON THE MARKET. DESIGNED ESPECIALLY FOR BURNING BRICK, TILE AND TERRA COTTA



ADJUSTABLE TIP

Patented
No. 1 BURNER
The "Brickyard Wonder"
For Down-draft Kilns

No. 2 BURNER
For Up-draft Kilns
with handle to adjust tip to suit low and heavy fire

Not an experiment, but a severely tested, well proved burner whose superiority to all others has been amply demonstrated.

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Nine Foot Iron Frame
DRY PAN

With Independent
and Suspended

MULLERS

A well-tried and
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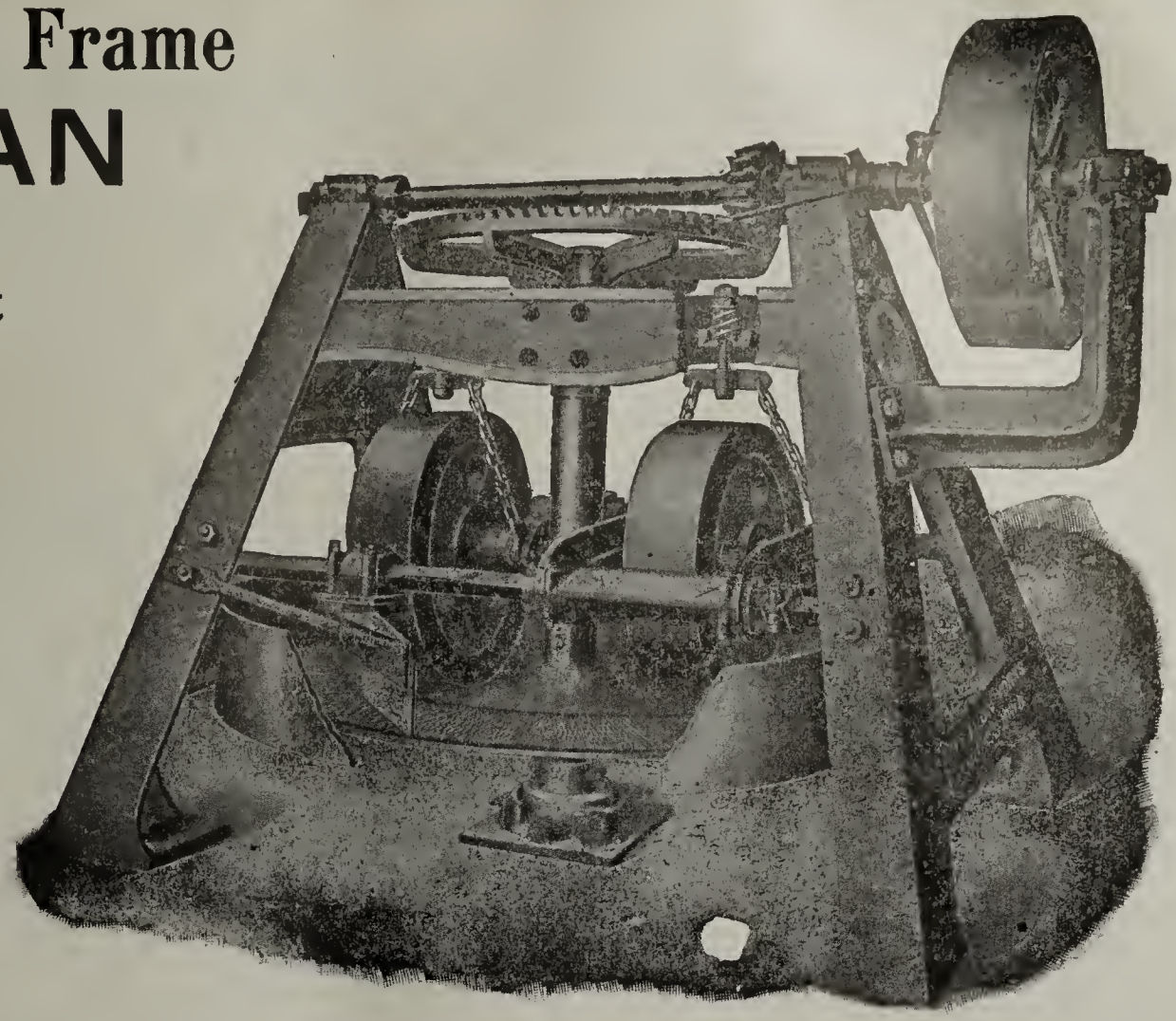


EAGLE IRON WORKS, BUILDERS, DES MOINES, IOWA

Steel Brick Pallets

Built Right,

Price Right,

Write Us

STYLE No. 4.

The only Steel Bench Pallet that can be stacked without slipping. They Interlock. Light, Strong, Rigid. (Patented.)

ALL STYLES

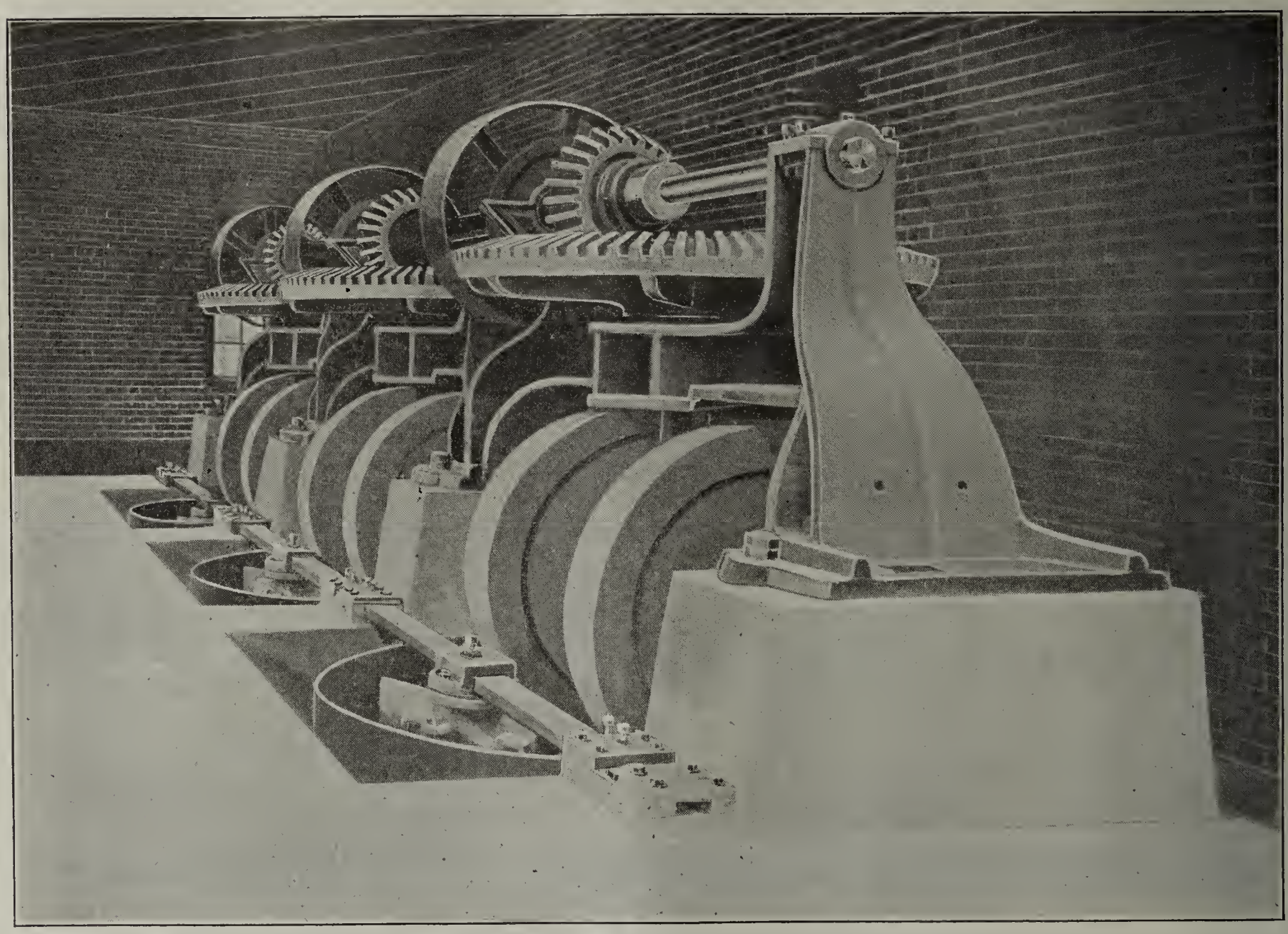
MADE EXCLUSIVELY BY

THE OHIO GALVANIZING & MANUFACTURING CO.

NILES, OHIO

Our Dry and Wet Pans are worth your investigation

We build them eight, nine and ten feet in diameter, weighing 30 to 50,000 pounds. They have great crushing and screening capacities



We also manufacture complete equipment for Sewer Pipe, Brick, Terra Cotta Drain Tile and Fire-Proofing Works

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The Means Foundry & Machine Co.

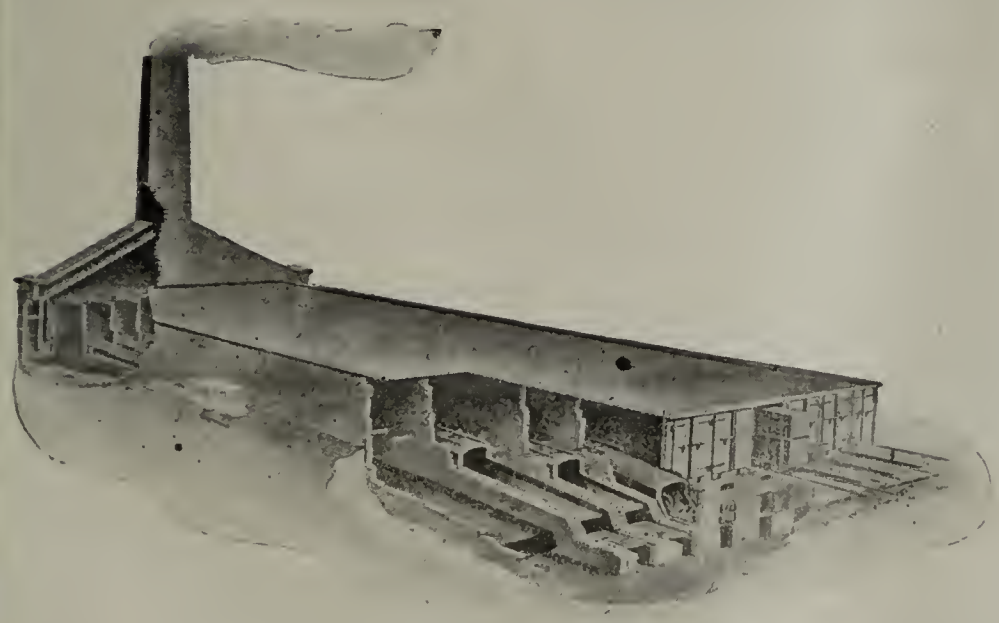
Steubenville, Ohio

Eastern Agents
WILSON KILN & DRYER CO.
West End Trust Bldg.
Philadelphia, Pa.

Wilson Kilns and Dryers

Built by Wilson Kiln & Dryer Co., Capacity 100,000 Brick Per Day.

Patented July 8, 1902



Patented March 3, 1903. No. 721988

Why are we always busy?

Because we study the brick business and build kilns and dryers to suit the conditions.

Our smoke-consuming furnaces, and continuous waste heat system, kiln floors, and test kilns have been in every day use for several years and have proven very satisfactory.

Our Brick Kilns are modern in every way, and have proven successful wherever built.

Our Radiation Heat Dryer has more radiating surface than any other dryer in use.

The Kilns and Dryers are very economical in construction and operation. We believe we have the most satisfactory Kiln and Dryer system to produce results on the market.

Wilson Kiln & Dryer Co.
West End Trust Building
Philadelphia, Pa.

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Manager of the Excelsior Granite Brick Co. -:- Specialist for the Sand-Lime Brick Industry

Inventor of a New Process for Making "GRANITE BRICK"

My system enables the manufacturer to turn out a sand-lime brick of a compression strength of 9,000 pounds per square inch from proper raw materials. Send in a one-pound fair average sample of your sand and a one-pound sample of your lime for examination.

Porcelain Enamel for Clay Brick

Forward, express charges prepaid, ten brick for testing purposes.

Special Enamel for Sand-Lime Brick

Send in as many brick as colors wanted and specify colors desired.

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HANDLE YOUR CLAY WITH ONE MAN AND

The Thew Steam Shovels

Made In Four Sizes. Mounted on Car Wheels or Traction Wheels.

Type No. 1 Shovel—Geo H. Clippert & Bro., Detroit, Mich.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adjusted to cut to any desired level.

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Wire Cables used instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickyards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

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Established 1879

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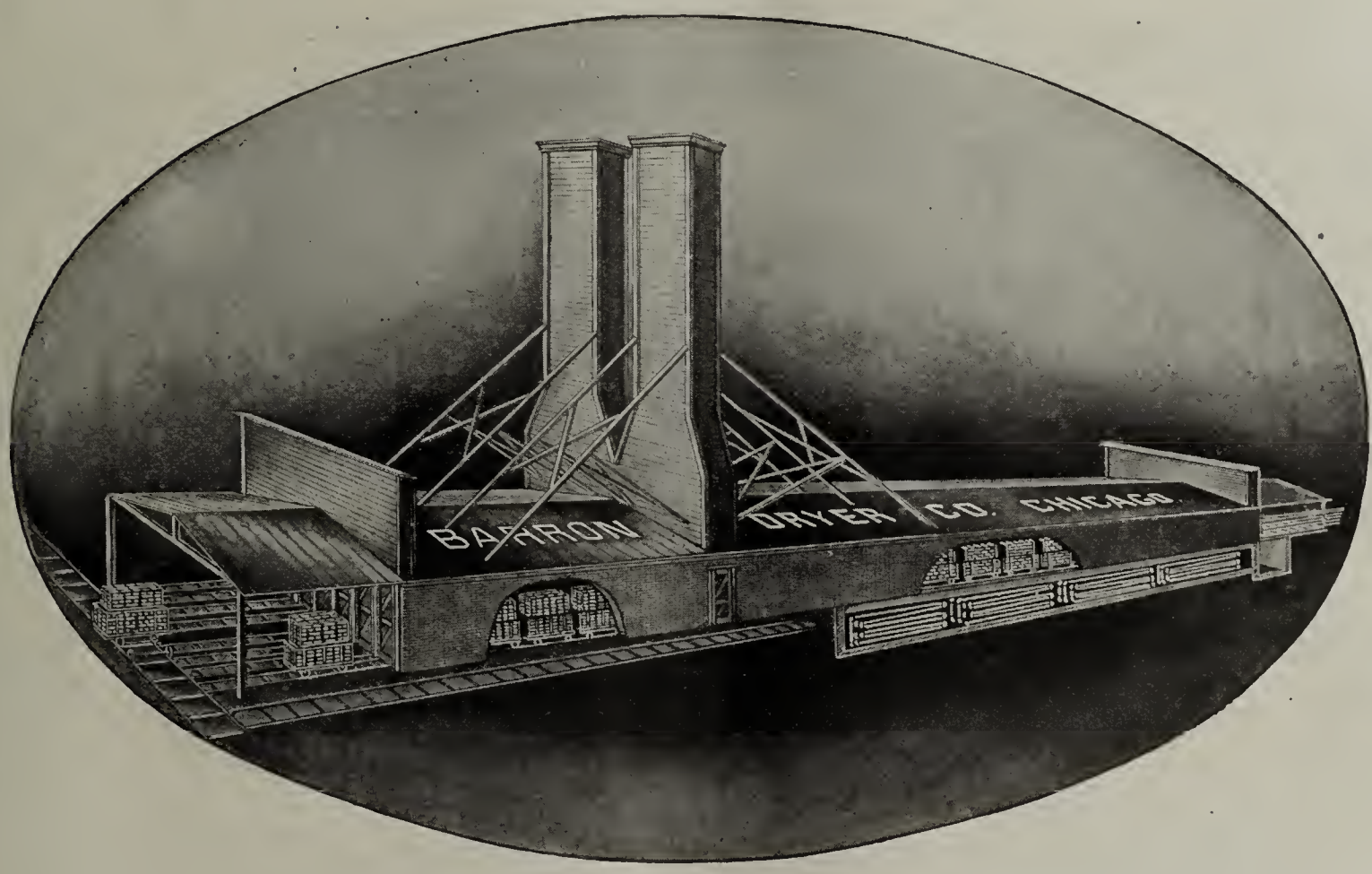
CHICAGO IRON CLAD DRYERS
BARRON'S TENDER CLAY DRYERS



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CASTINGS, FORGINGS, PIPE, VALVES, FITTINGS
RAILS, SPLICES, SPIKE, STRUCTURAL MATERIAL

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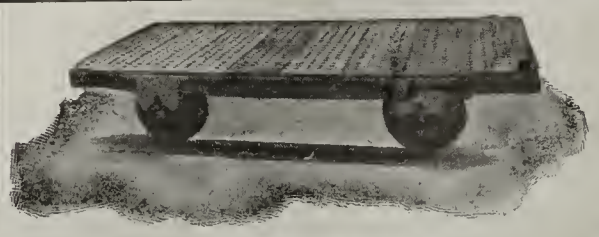
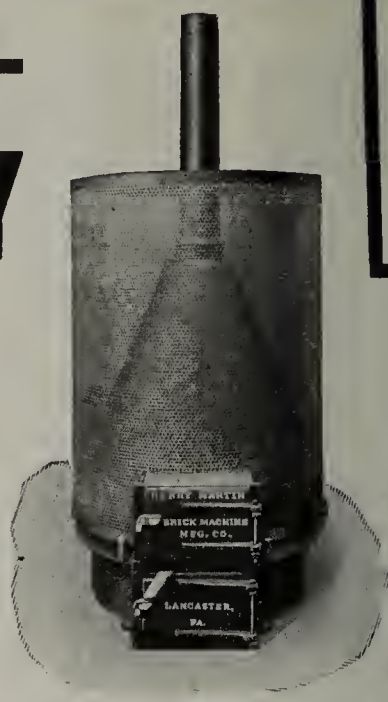
IS KNOWN THE WORLD OVER FOR

ITS SIMPLICITY, DURABILITY AND COMPLETE SATISFACTION THROUGHOUT



DRYER CARS

TRUCKS



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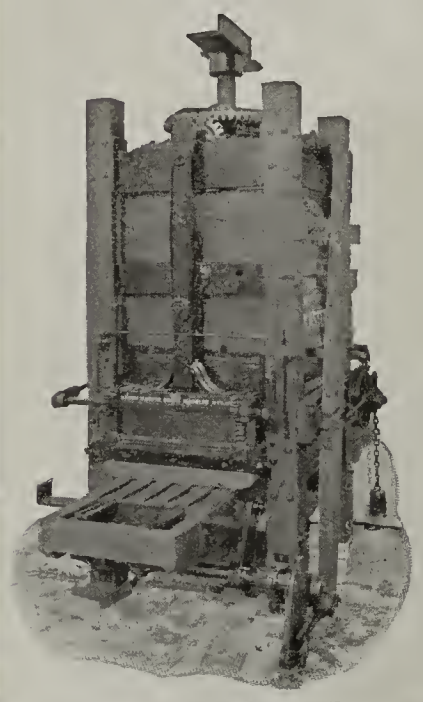
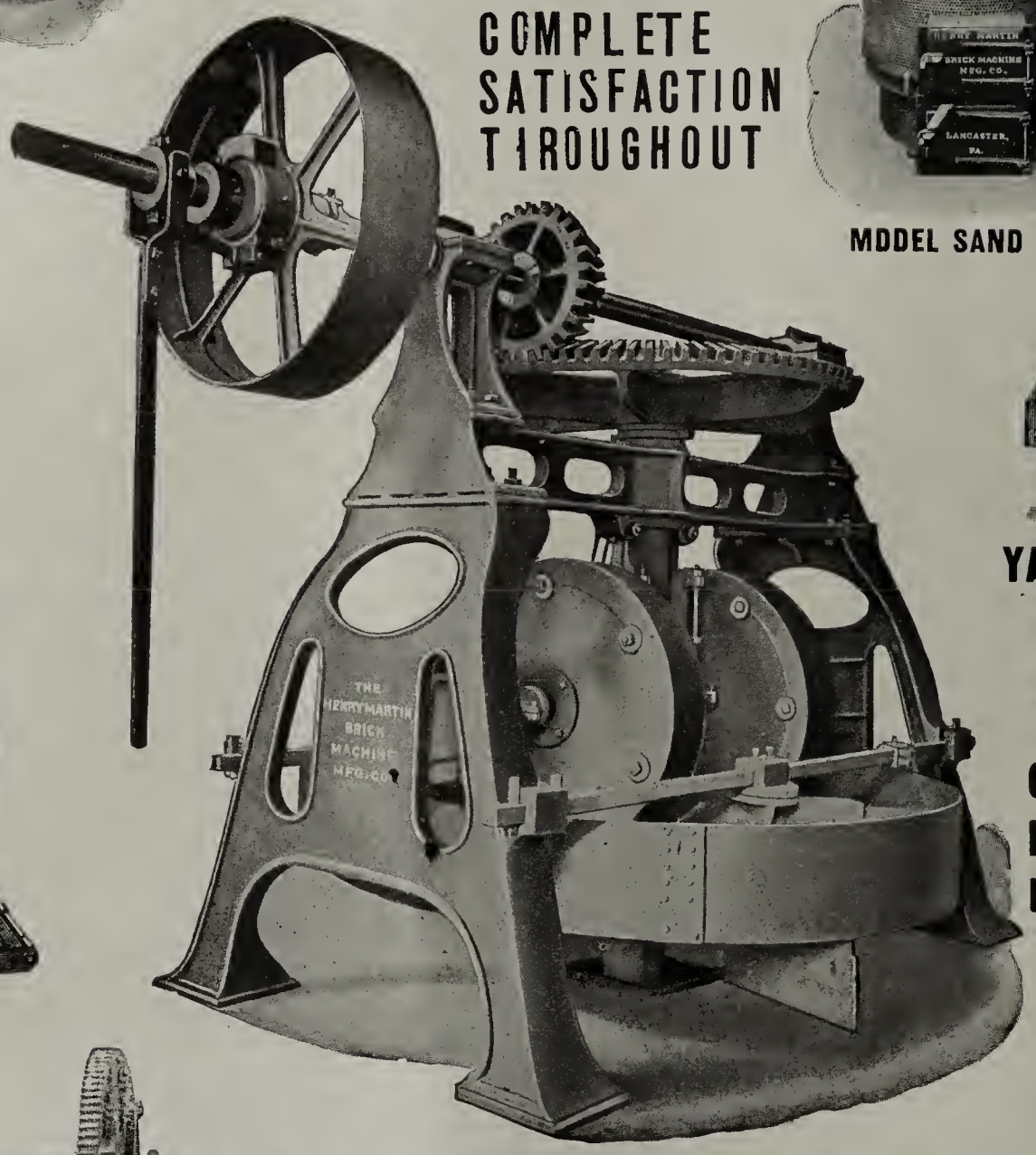
WE GUARANTEE OUR MACHINERY



HORSE POWER MACHINE



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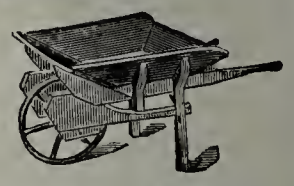
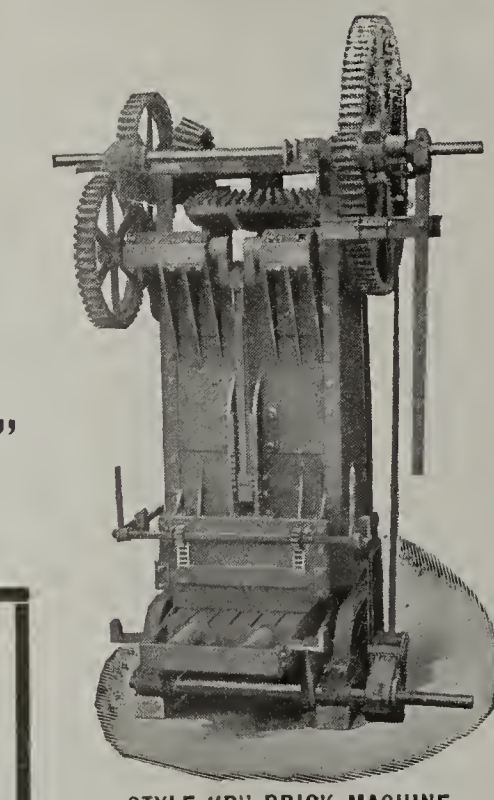


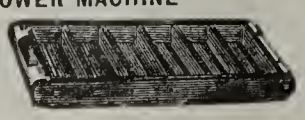
OF ALL KINDS BUILT RIGHT

TRUCKS



STYLE "P" BRICK MACHINE

BRICK MOULDS THAT ARE BUILT FOR HARD USAGE IS THE "MARTIN." TRY A SET



WE BUILD DRY OR WET PANS 5-7 OR 9-FT. WRITE US.

"WE FURNISH EVERYTHING THE BRICK-MAKER NEEDS"

STYLE "P" CRUSHER

MARTIN

CLAY-WORKING EHGINEERS & MACHINERY EXPERTS

LANCASTER, PENNA., U. S. A.

THE "MARTIN" STEAM BRICK "DRYING SYSTEM"

PATENTED February, 22d, 1898, No. 599509
October 10, 1905, No. 95520
November 14, 1905, No. 804489
May 26, 1908. No. 888831

This Dryer, and the design in arranging it, are under the protection of the United States Government by virtue of patents granted. Patents have also been taken out in all the principal foreign countries. We are the sole owners and control these important patents and have authorized NO ONE to manufacture or sell the "MARTIN"

RACK PIPE STEAM BRICK DRYERS

☞ YOUR BRICK DRY OVER NIGHT ☜

☞ LABOR SAVING THROUGHOUT ☜

From "Martin Patent System" Brick Dryer to Kilns

ADAPTED FOR SOFT-MUD OR STIFF-MUD BRICK

SUPERIOR IN EVERY RESPECT TO ANY OTHER SYSTEM—Labor Saving Throughout. Dispenses with Truckers and car Pushers. Pallets Automatically Return to Brick Machine. Quick to install and low in price, and takes up very little Yard room.

The sale and construction of the "Martin" Rack Pipe Steam Brick Dryer is under the direct supervision of the Factory Office at Lancaster, Pa.

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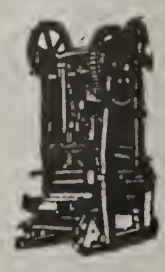
LANCASTER, PA., U. S. A.



Silicate Brick Made by the "Division Method" Patented

THE PHILADELPHIA OPERA HOUSE

Built by Oscar Hammerstein and called the finest Opera House in the World. This beautiful building is faced with over 500,000 of our WHIE SILICATE BRICK, made under our patented process. These bricks were also used to line the wall at back of stage and also for the stairways.

The building seats 4,100 people and measures 240 feet on Broad Street and 160 feet on Poplar Street.

How would you like to make Brick suitable for Facing Buildings like this and do it cheaper than common brick can be made in any other way out of sand and lime?

We challenge any one to make as good a brick as we do by our process, and will allow him twice our cost.

The factory we built last year at Washington, D. C., is pronounced the most compact and cleanest known, and the product the finest brick produced.

WE CAN DO AS WELL FOR YOU. ASK US ABOUT IT AND LET US SHOW YOU

International Sand-Lime Brick & Machinery Company

Engineers and Contractors for Silicate Brick Factories

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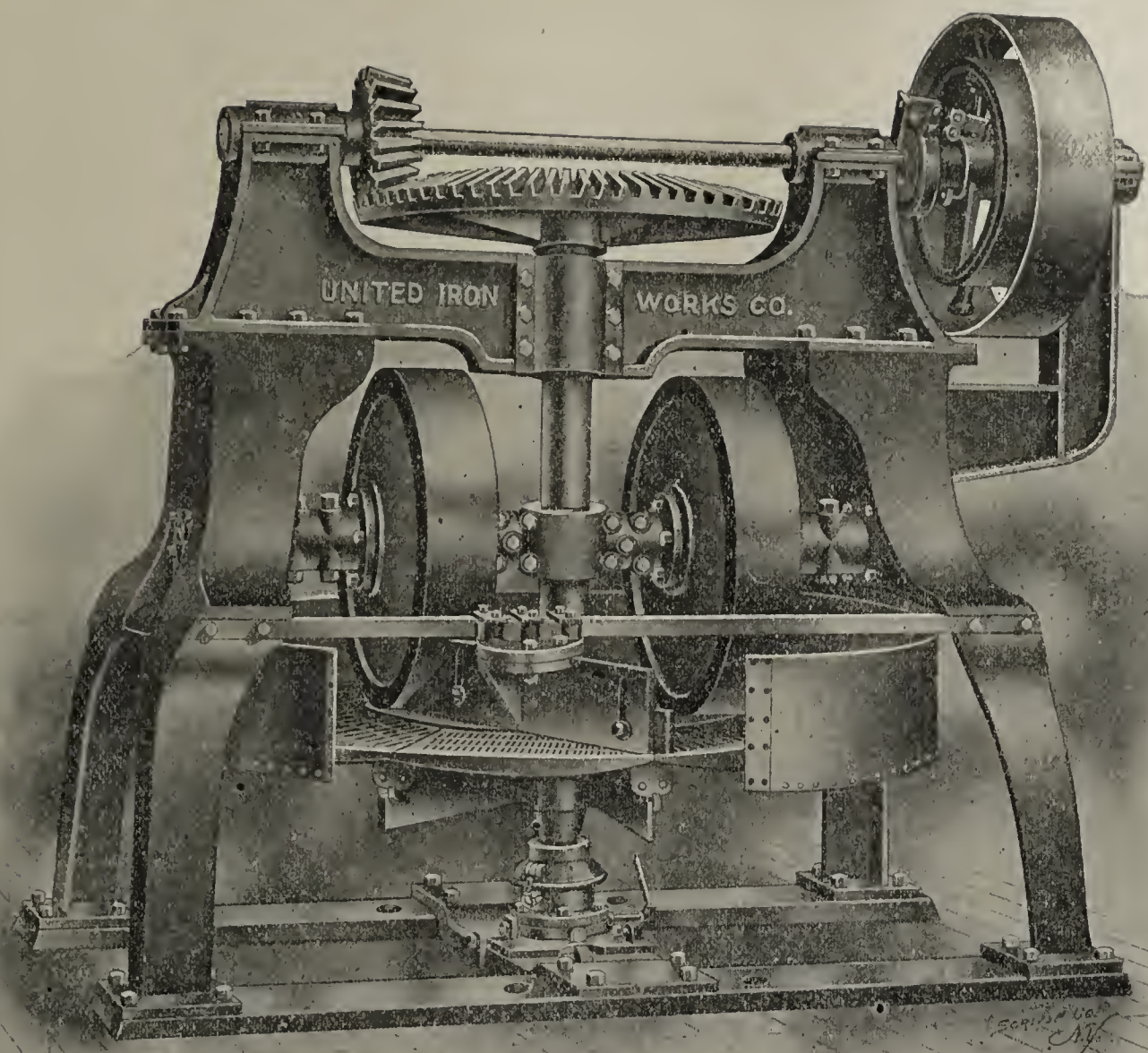

Here's What One of the Largest Cement Companies in the United States Says About our "Pittsburg" Dry Pan:

"Answering yours of the 19th instant; We are pleased to state that the dry pan which we purchased of you about a year ago has given entire satisfaction. We consider it one of the best, if not the best, dry pan manufactured and shall, indeed, be pleased to recommend it to prospective purchasers of such machinery.

Yours truly,

WESTERN STATES PORTLAND CEMENT CO."

And they Backed up their statement by ordering recently THREE MORE Pans from us

UNITED IRON WORKS COMPANY

General Offices: SPRINGFIELD, MO.

SPRINGFIELD, MO.; AURORA, MO.; IOLA, KAS.; PITTSBURG, KAS.
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No. 217-E
Electric Side Dump Car.

No. 145
Ball Bearing Turntable. Made in sizes from 4 ft. to 11 ft. in diameter.

No. 161-A
Gable Bottom Dump Car, with trip and brake.

CARS FOR BRICK YARDS, CEMENT WORKS, CONCRETE BLOCK MANUFACTURERS, STONE QUARRIES, ETC.

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TURNTABLES, TRANSFER CARS, DRYER CARS, TRACK, SWITCHES, BRICK PALLETS.

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Heavy Double Deck Car
Patent Malleable Iron Uprights.

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NO. 277
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The Atlas Car and Mfg. Co.

CLEVELAND, OHIO

VOL. 35 No. 2

CLAY RECORD

A JOURNAL DEVOTED TO
THE DISSEMINATION
OF ALL MATTERS
PERTAINING
— TO THE —
CLAY
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July 30, 1909

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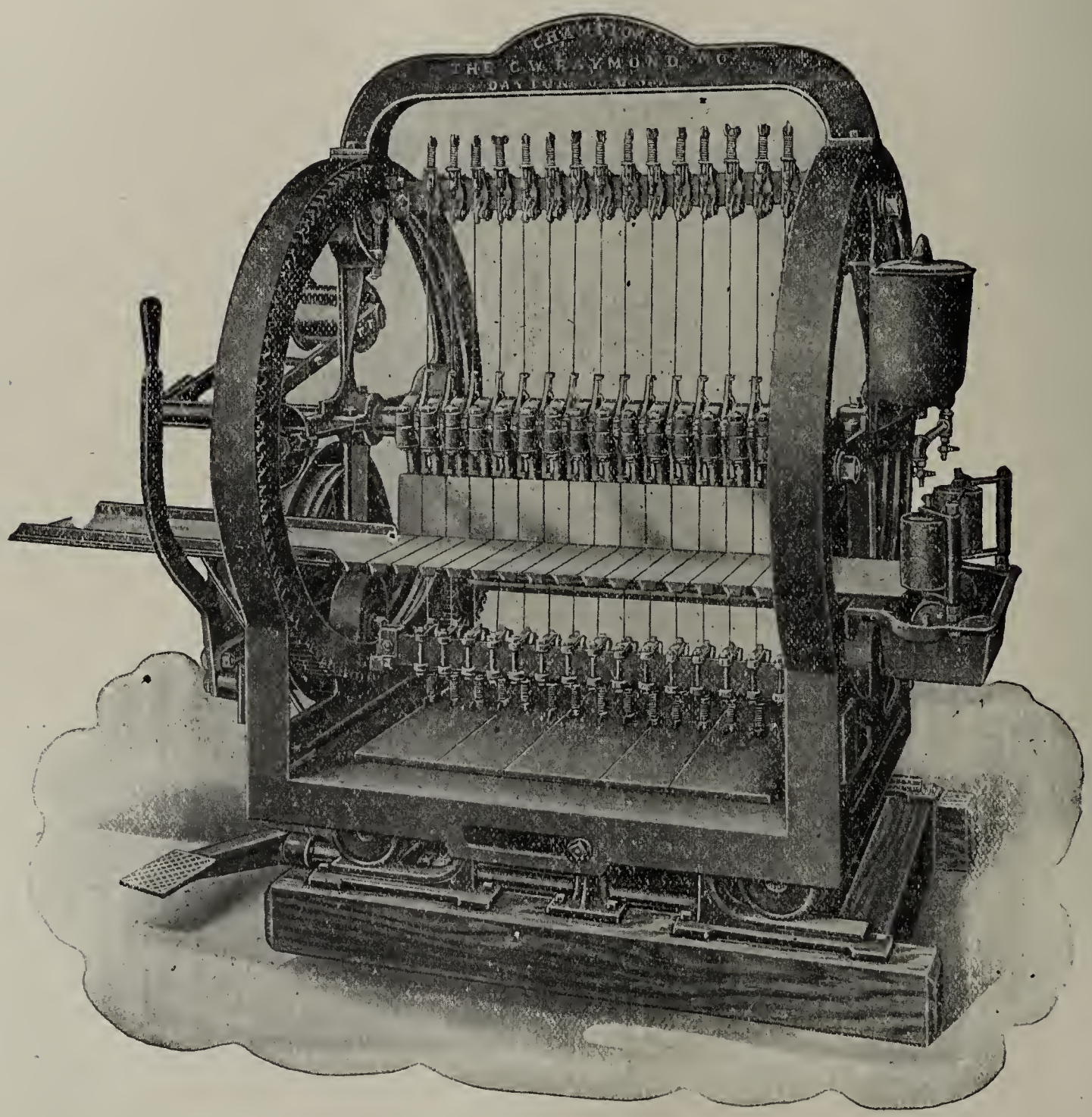
Imperative demands from all sections of the country for a cutting table to accurately cut stiff mud face brick has brought out the Champion, the next upward step in the evolution of Rotary Cutters. It is semi-automatic and all of the desired qualities are there, we find nothing to improve about it. It has won its way by sheer merit. It has the good will of every face brick maker who uses it, and many more who have but seen it. It is chock full of perfection. We haven't room to tell you all about it here, but write now.

THE C. W. RAYMOND COMPANY,
DAYTON, OHIO, U. S. A.



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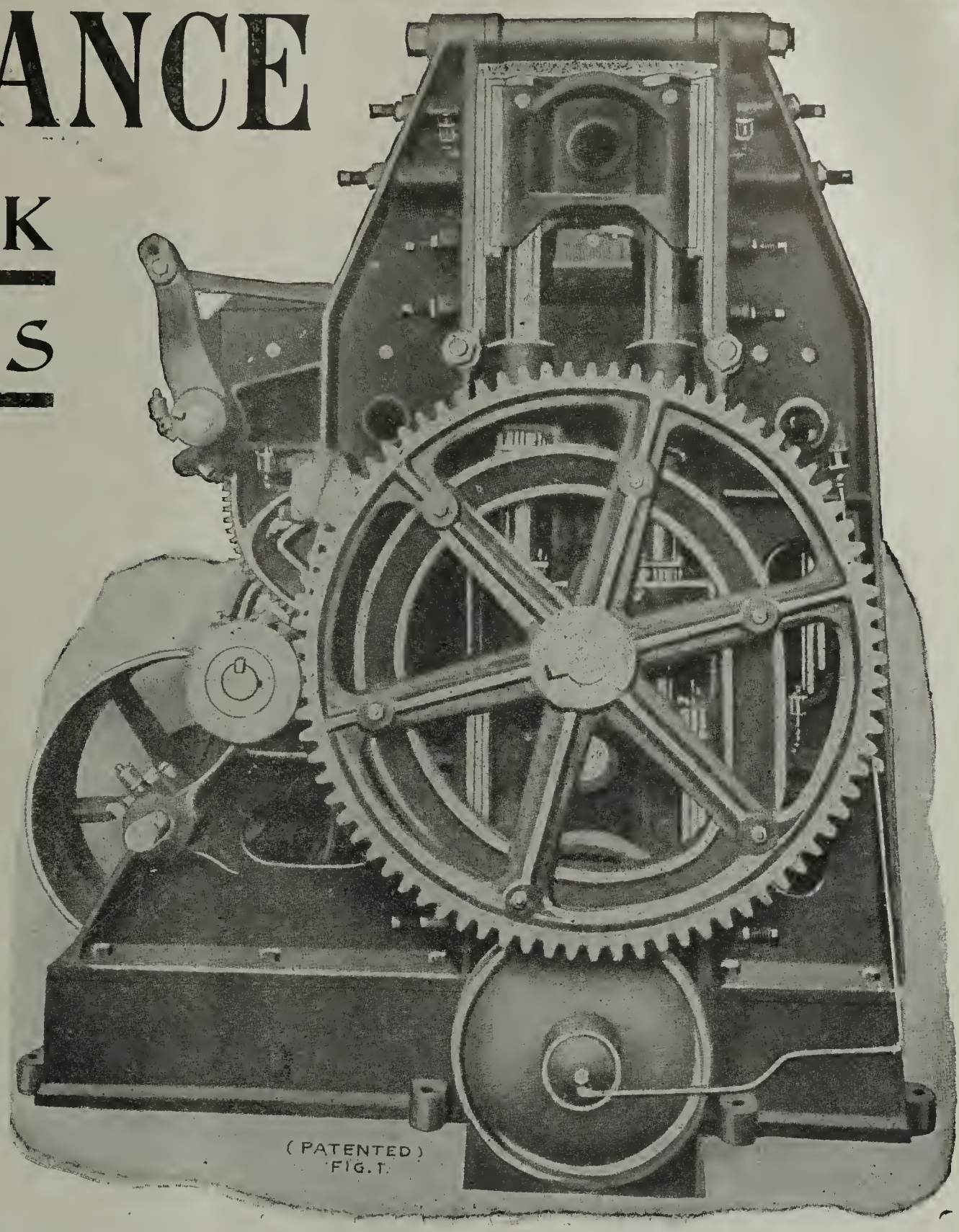
BRICK PRESS

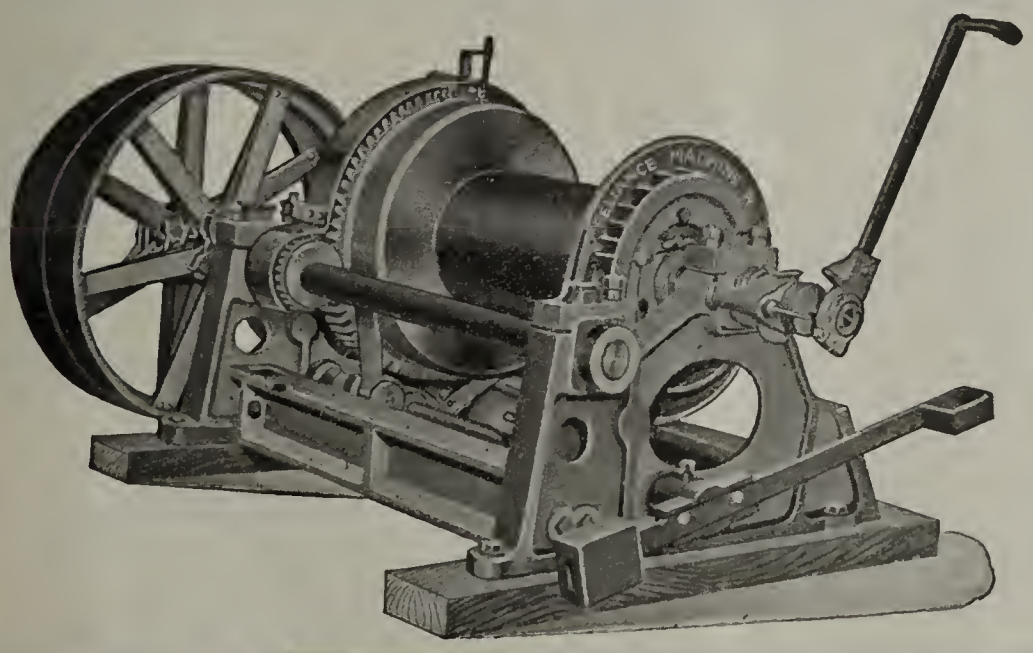
The Only Machine Making Brick Without Granulated Centers

No Toggles
Powerful
Simple

We Design and Equip Dry Press Brick Plants Complete



Improved Reliance Friction Drum Hoist



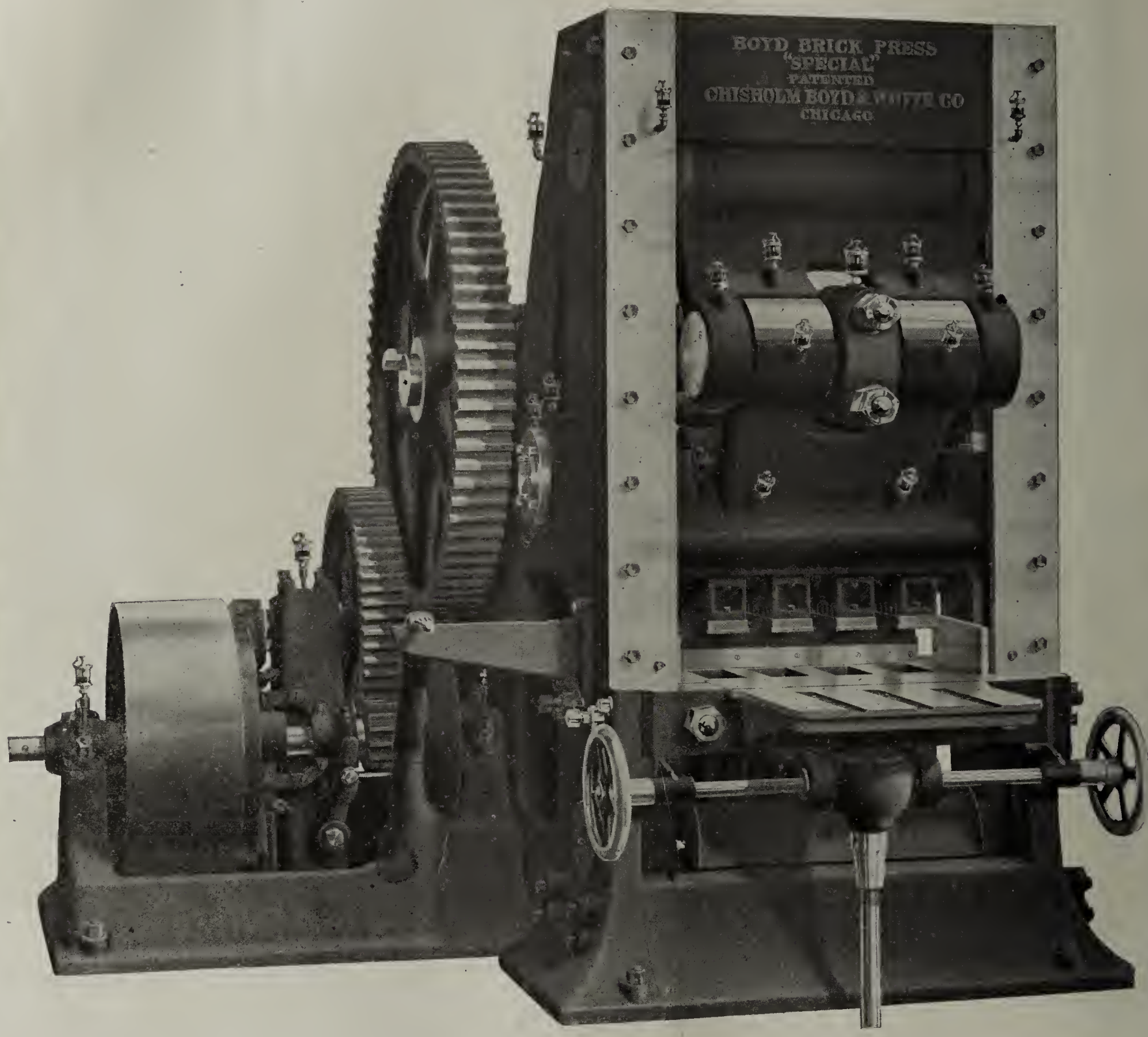
STEAM OR BELT DRIVEN

Specially Adapted to Service in Clay Plants

RELIANCE MACHINE and TOOL WORKS, St. Louis, Mo.

THE BOYD BRICK PRESS

Built in Two, Four and Six-Mold Sizes



FOUR-MOLD SPECIAL

BRICK PLANTS designed and complete machinery equipment furnished. More Boyd Presses in use than all other Press Brick a chines combined.

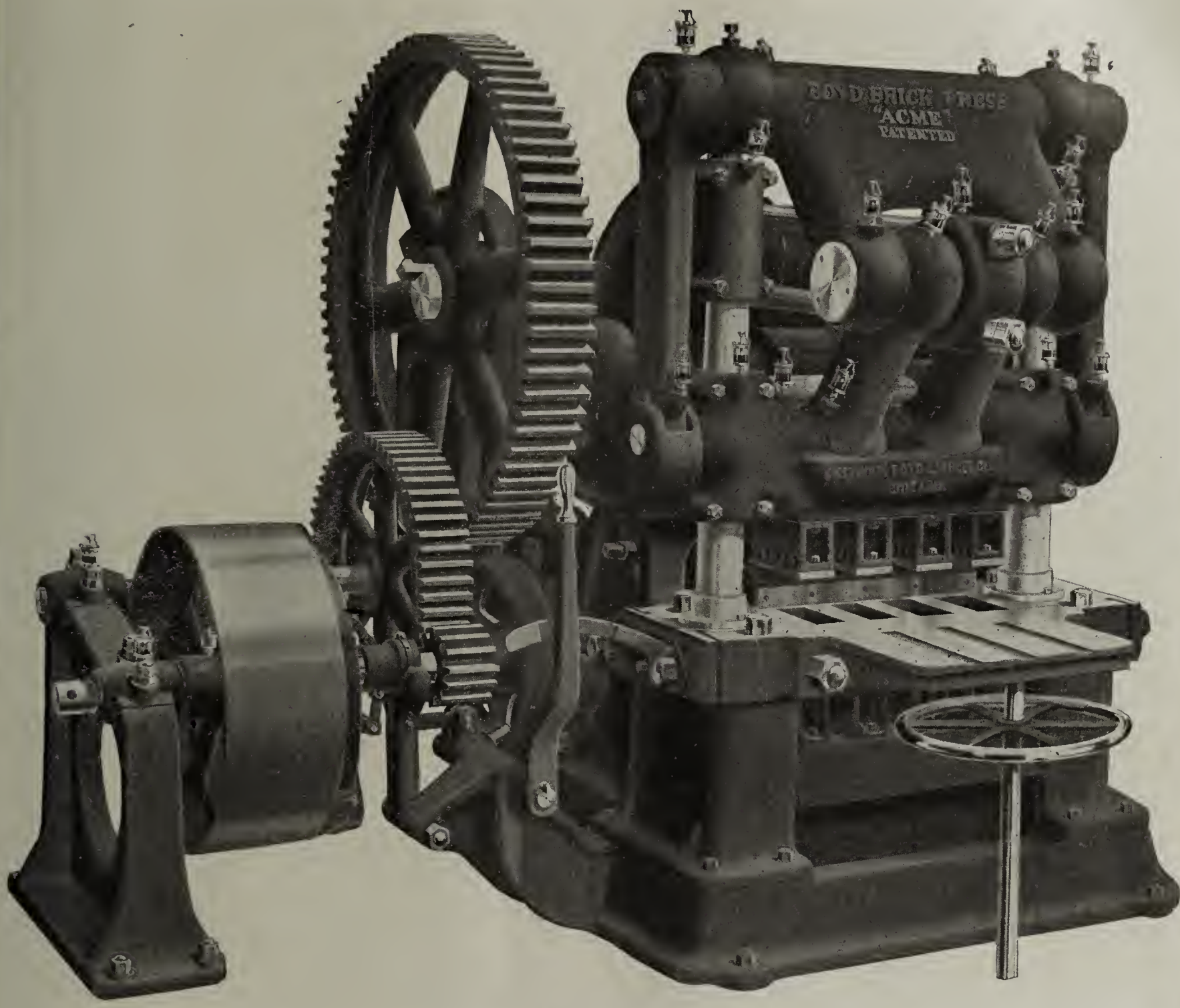
The Boyd Press has great strength and endurance, great pressure and long dwell. Boyd Presses built 20 years ago are still in use and doing good work. Brick Presses that last are the cheapest in the end.

Chisholm, Boyd & White Company

Office and Works: 57th and Wallace Streets, CHICAGO, ILL.

THE BOYD BRICK PRESS

Built in Two and Four-Mold Sizes



FOUR-MOLD "ACME"

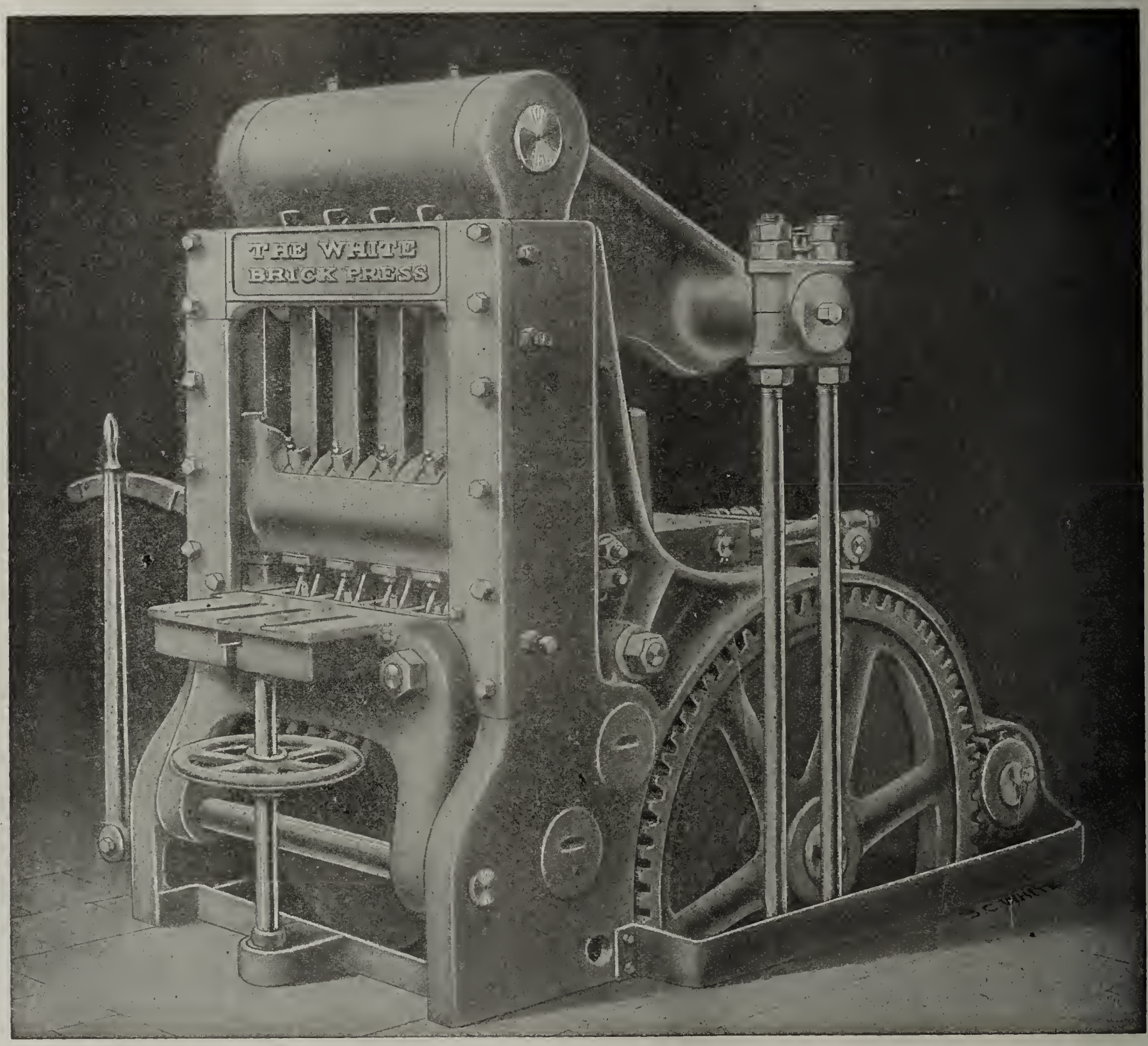
Detailed perfection, strength, endurance and quality of product have made the Boyd, the Brick Press by which all others are judged.

Write for catalogue No. 20 containing suggestions concerning the equipment of brick plants with complete plans.

CHISHOLM, BOYD & WHITE CO.

Office and Works: 57th and WALLACE STREETS **CHICAGO, ILLINOIS**

ALWAYS ON THE JOB
THE WHITE BRICK PRESS



When You Learn of a Breakdown on the Yard, You may be sure it is NOT the PRESS, if it is a WHITE

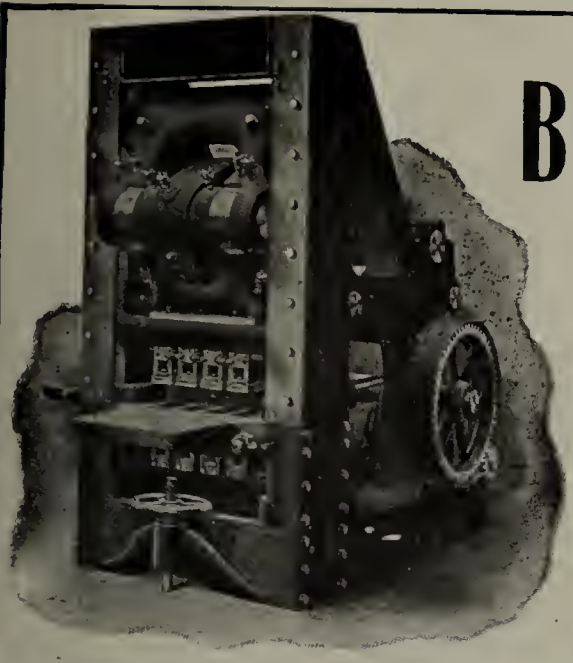
SEND FOR CATALOGUE

CHICAGO BRICK MACHINERY CO.

1308 GREAT NORTHERN BUILDING, CHICAGO

BERG BRICK PRESS

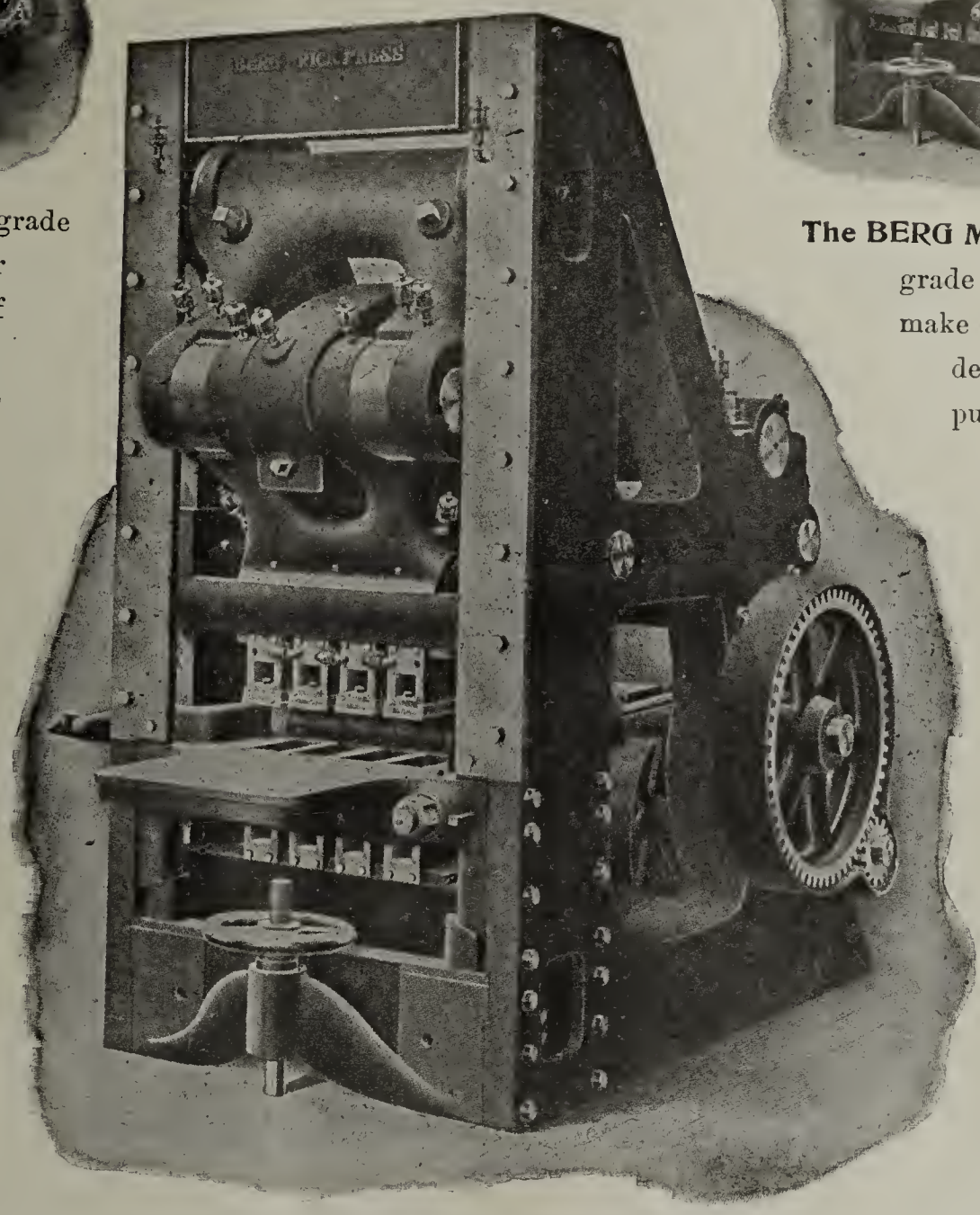
The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.

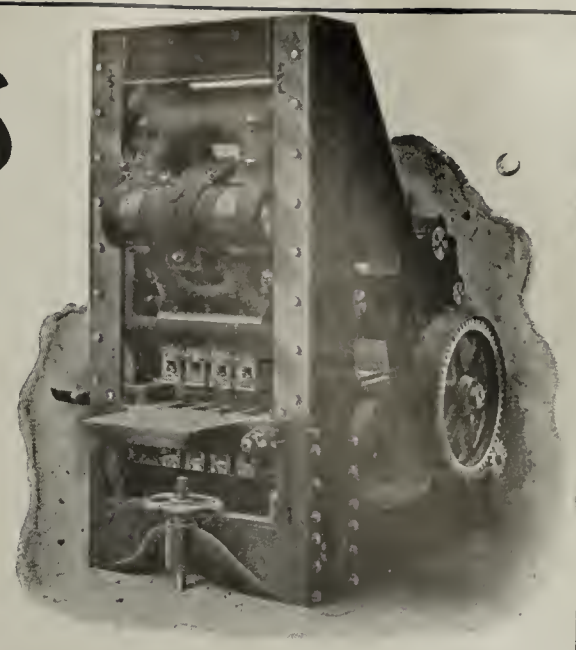


The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.

First-Class Workmanship. Cut Gearing. Fully Warranted.

The BERG makes the best sand-lime brick and cheapest because it is the strongest machine and gives the highest pressure. Thirty-five sand-lime plants in United States use the **BERG** Brick Press SUCCESSFULLY.

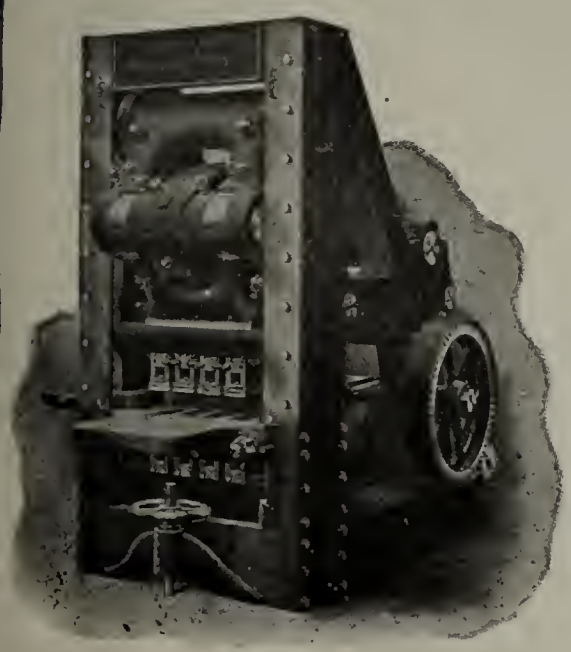




The BERG MAKES the highest grade of fire brick. Can make all kinds of shapes desired for fire-brick purposes.

Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.



The 1905 Berg Press

Many other steps further forward in improvement and highest grade of material and workmanship, also cut gearing. Fully guaranteed as to its success. Manufactured by its inventor in Toronto, Canada, exclusively. Plans and specifications on the different kinds of plants furnished, also all equipments.

For prices and full particulars, address

A. BERG & SONS

OFFICE: MANNING CHAMBERS

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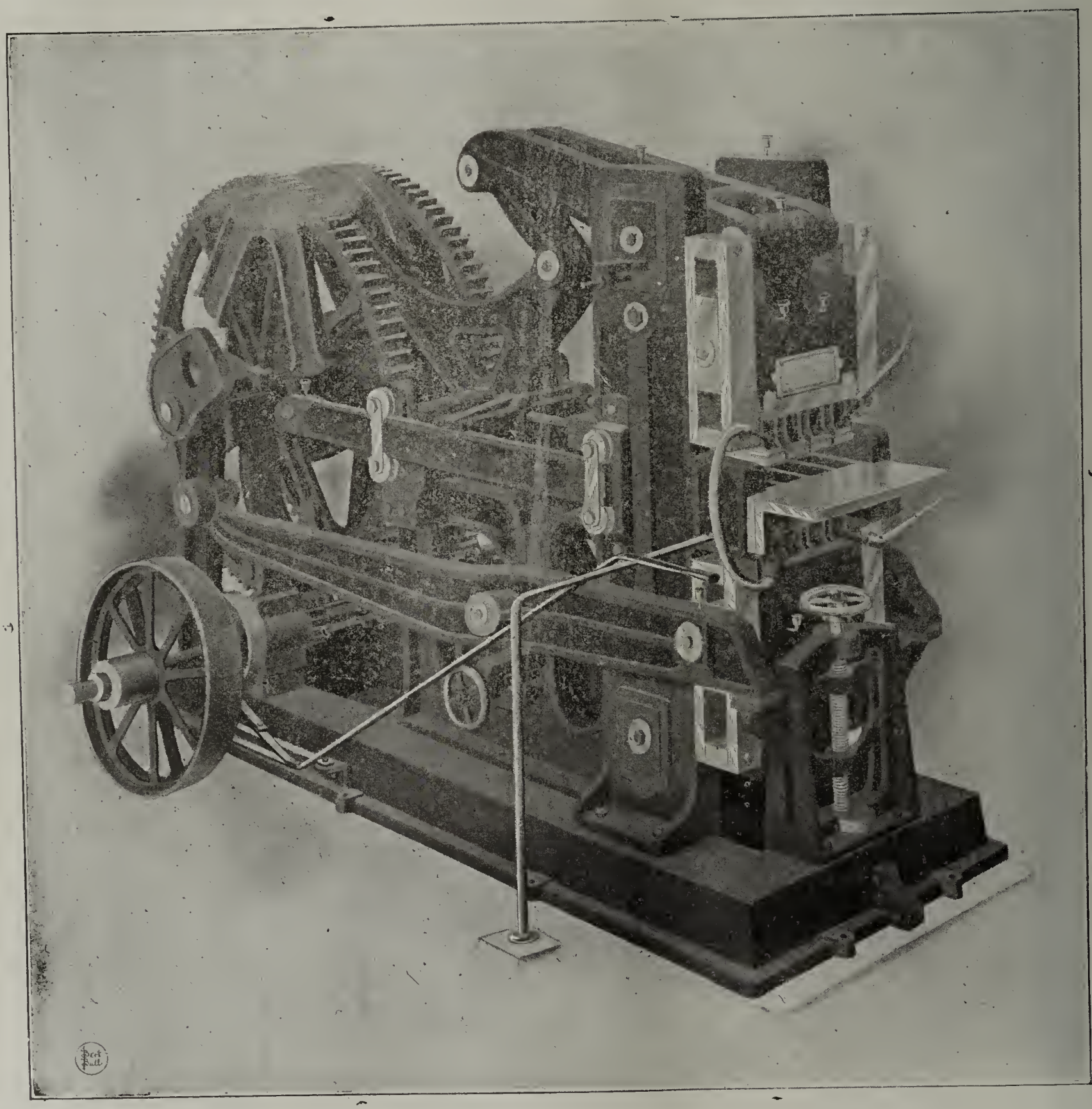
The Fernholtz Brick Press

Weighs SIXTEEN Tons, Built for Heavy Work



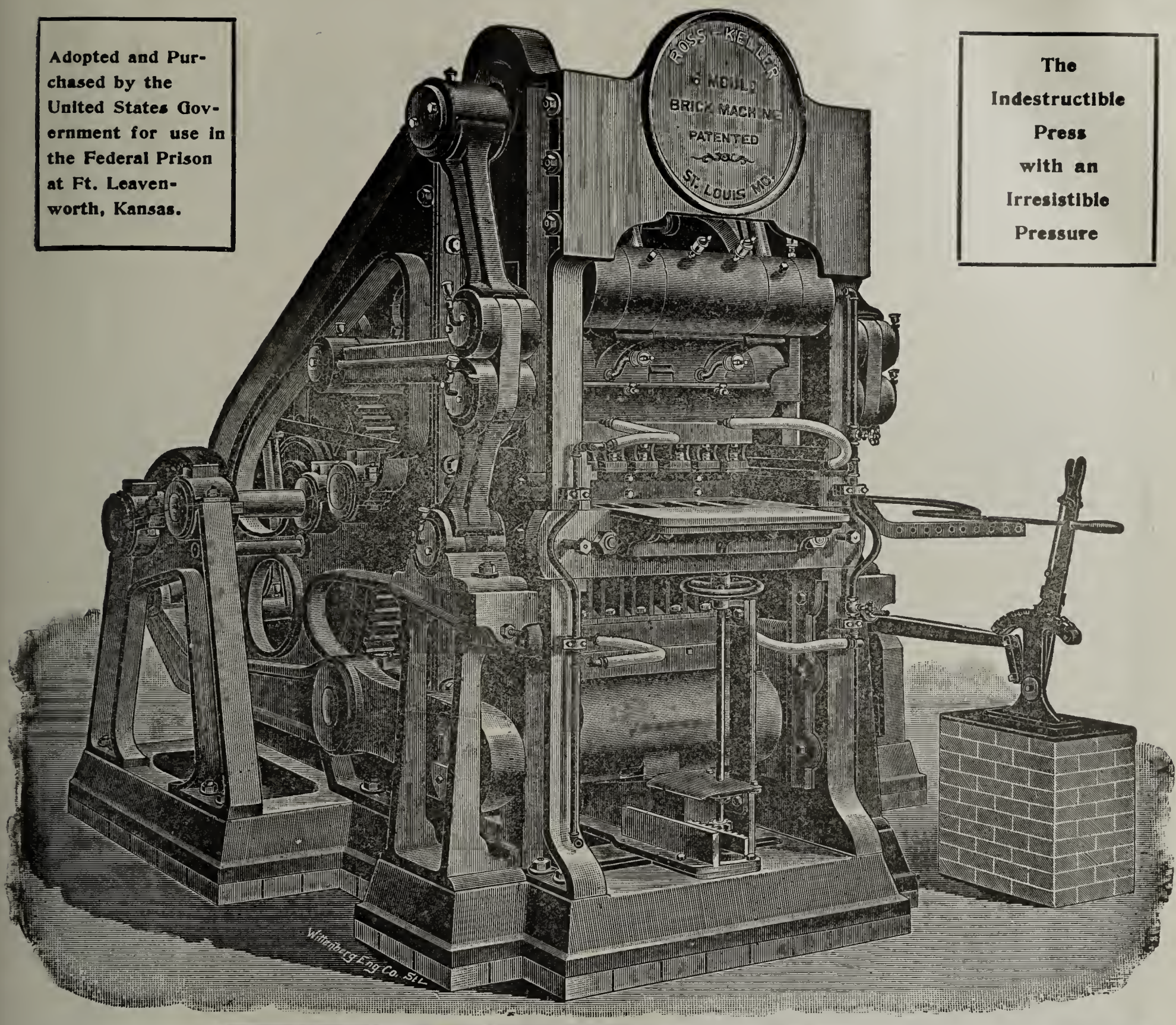
Holds Pressure on Material Longer and Presses it Harder with Less Power than any other Dry Press

The Fernholtz Brick Machinery Company

1446 Old Manchester Road, ST. LOUIS, MO.

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.

The Indestructible Press with an Irresistible Pressure



WE BUILD

Sand-Lime Brick Plants, Shale and Clay Brick Plants

ARE ALSO SOLE MANUFACTURERS OF THE

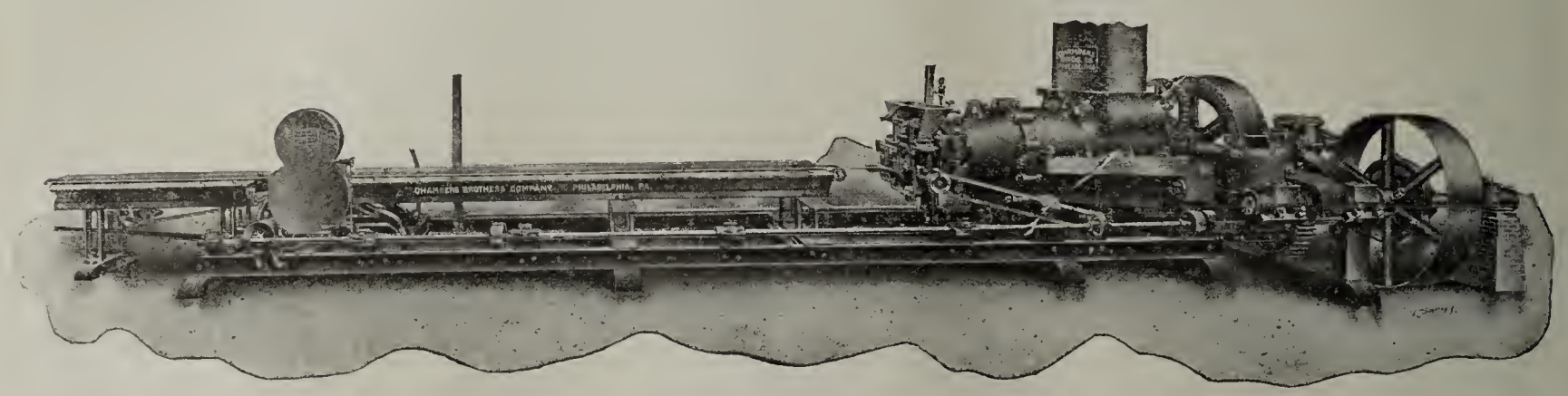
Ross-Keller Triple Pressure Brick Press

The strongest and most efficient Brick Machine made, and the only Press that gives three distinct pressures to the brick

ROSS-KELLER TRIPLE PRESSURE BRICK MACHINE CO.

OFFICES FULLERTON BUILDING, - - - - - ST. LOUIS, MO.

Chambers Brick Machinery



Strong, Heavy Machines with Steel Pinions and Shafts; Stone Extracting Crushers, Five Sizes Disintegrators; Dry Pans; Single and Double Shaft Mixers and Pug Mills; New Pattern Clay Elevators.

Manufacturers of

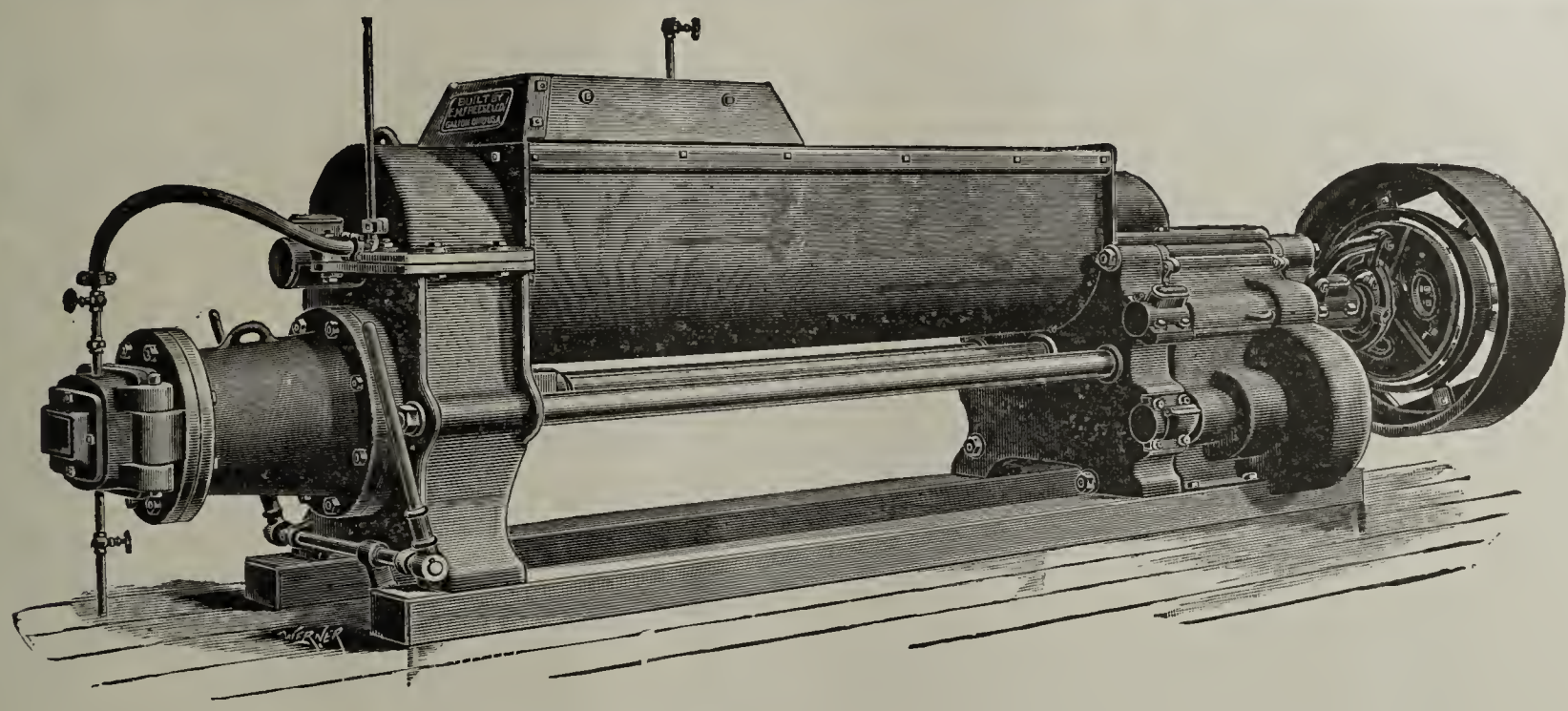
THE KEYSTONE DOUBLE DISINTEGRATORS

For Grinding Tough Clays in which Small Stones may be Imbedded

Chambers Brothers Company

Philadelphia, Pa. **Chicago, Ill.**

UNION BRICK MACHINES



We build these Machines in five sizes. Capacities to 10,000 brick per hour.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

State your requirements and let us furnish particulars.

E. M. FREESE & CO.

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THE POTTS
HORIZONTAL BRICK MACHINE

Built Entirely of Iron and Steel.

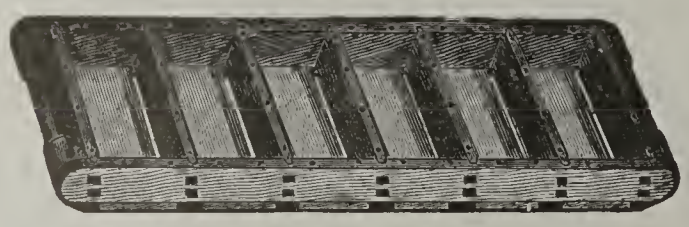
The only machine of this class having Steel Gear and Steel Shaft.

Built of the Best Material by the Best Workmen.

Simple, Strong and Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

THE LEADER OF ALL SAND MOULD MACHINES.



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QUALITY IS OUR AIM.

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Are the best and most complete machines. Where the clay contains limestone, the Disintegrator will separate the large stones and the Crusher pulverize the small ones.

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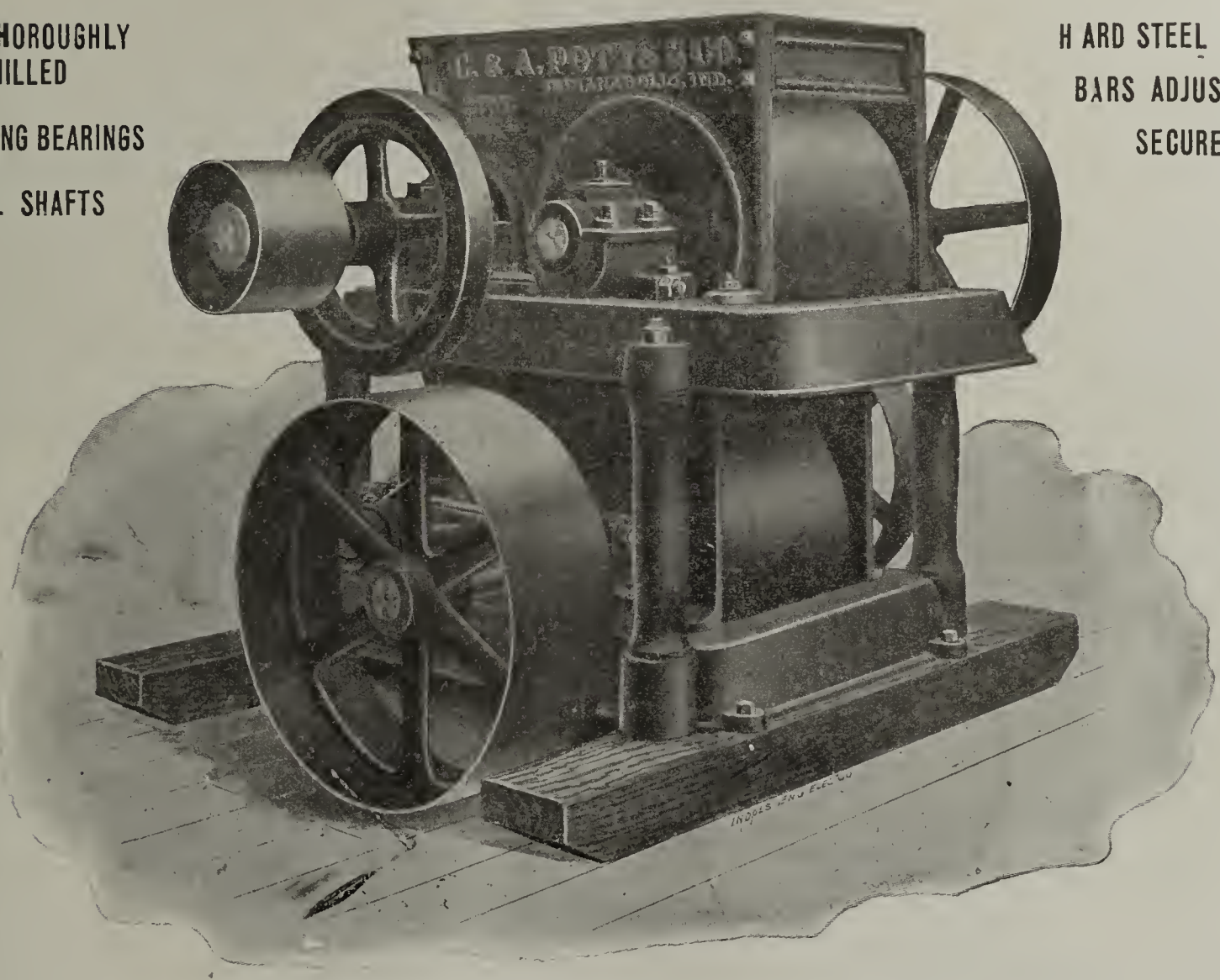

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Will not choke or clog from hard, dry or wet, sticky clays.
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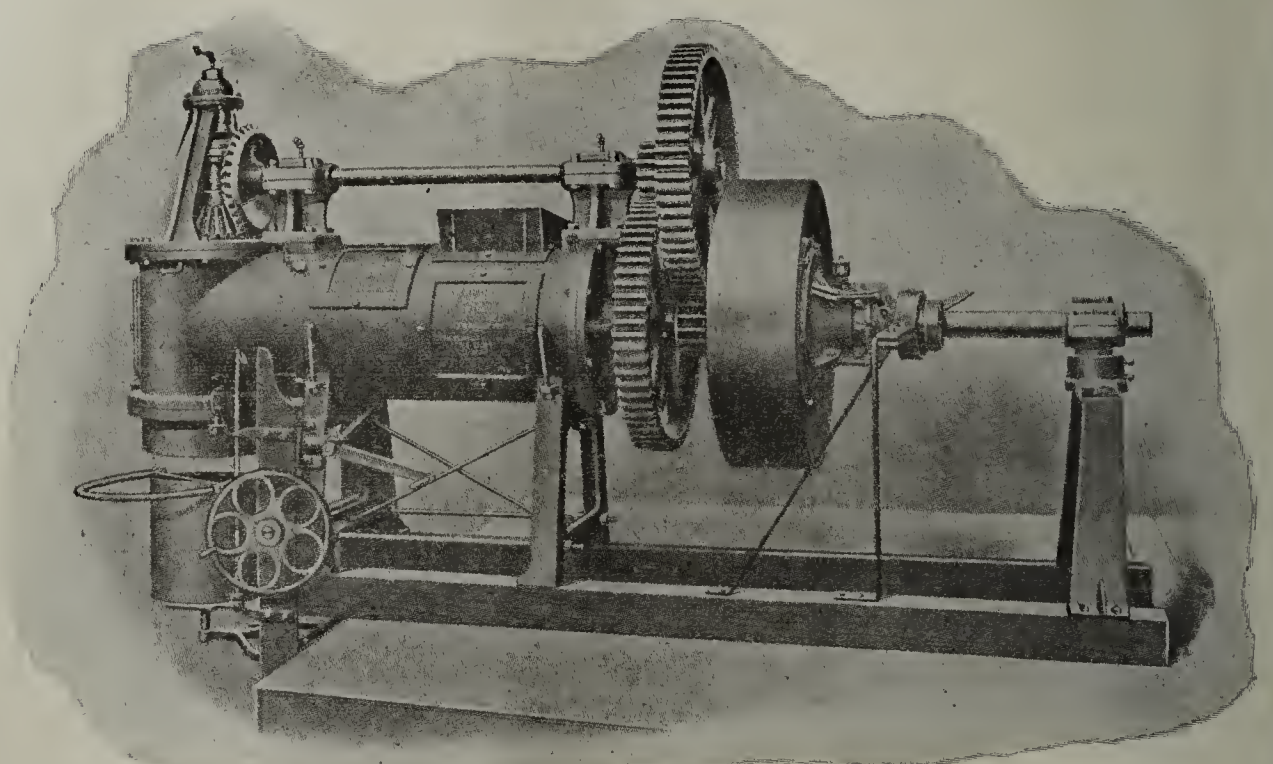

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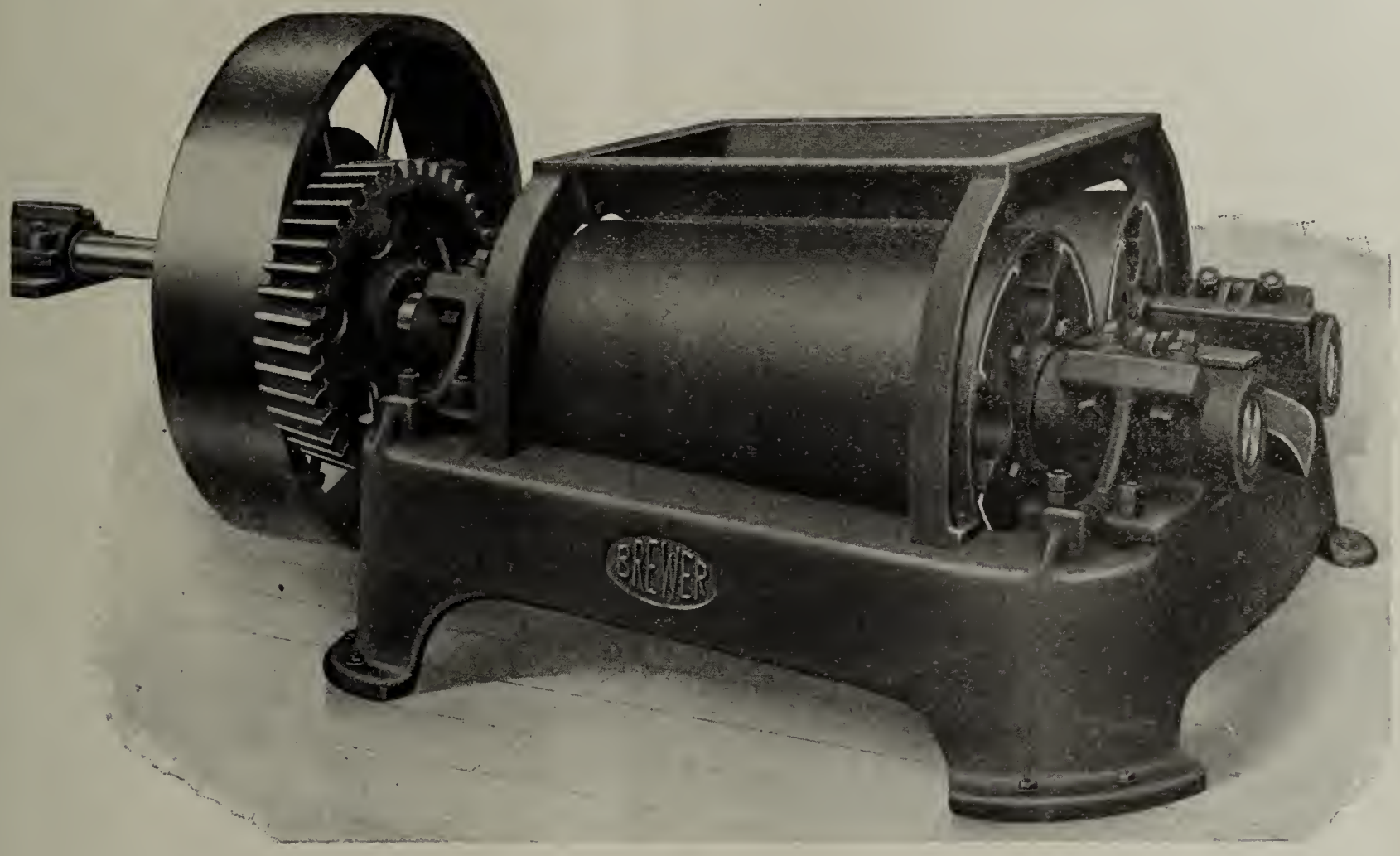
Do you know about Brewer Crusher Rolls with removable white-iron shells? Our catalog describes them.



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TECUMSEH, M...

...with no ...should be con-

...nt care should be exercised in ...a sound and properly annealed brick, ...o take as long to cool a brick as to burn

...w, gentlemen, I have given you possibly a crude ...a as to how a high grade brick should be burnt. This brings us to our subject, "Kilns Suitable for the Manufacture of High Grade Brick."

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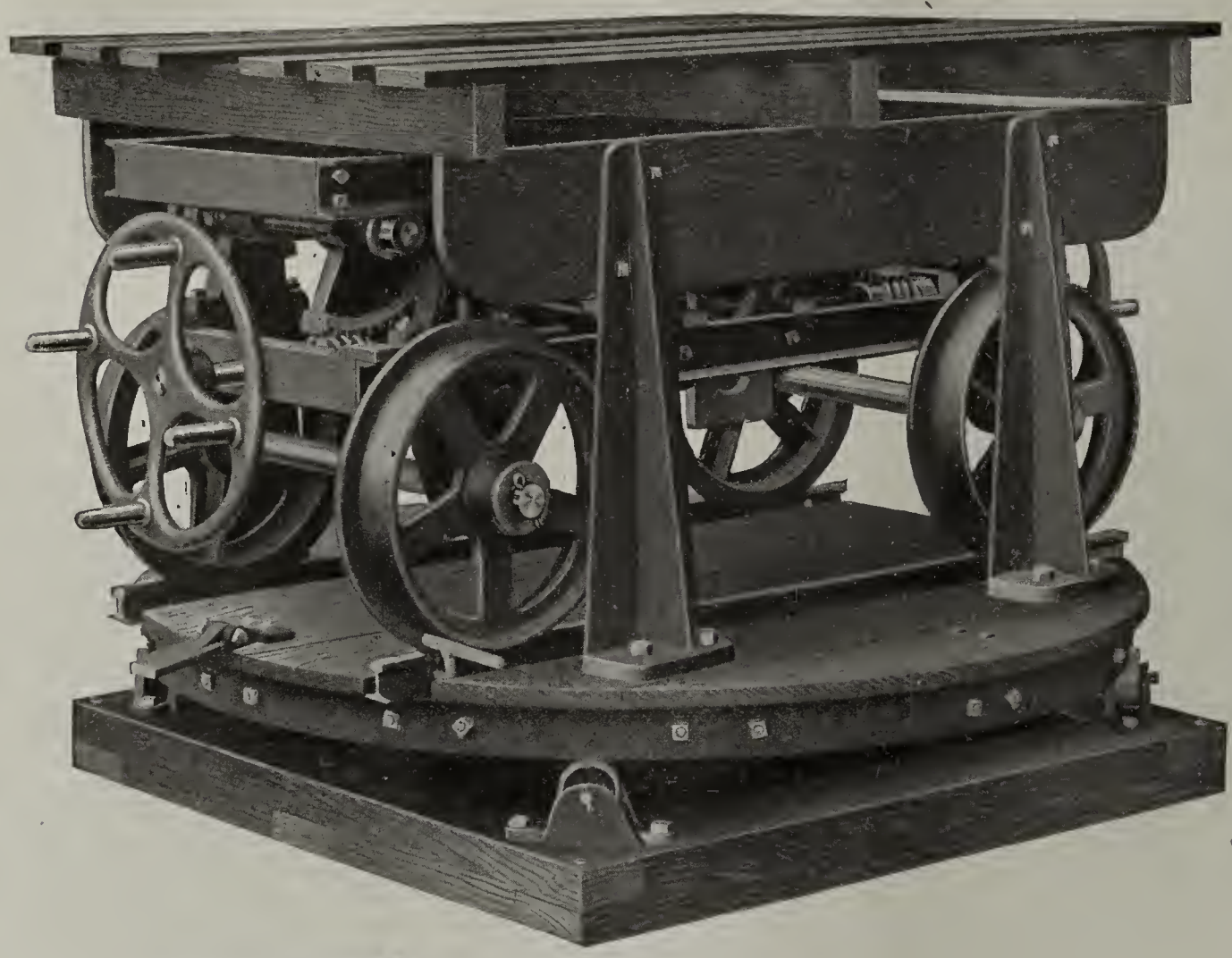

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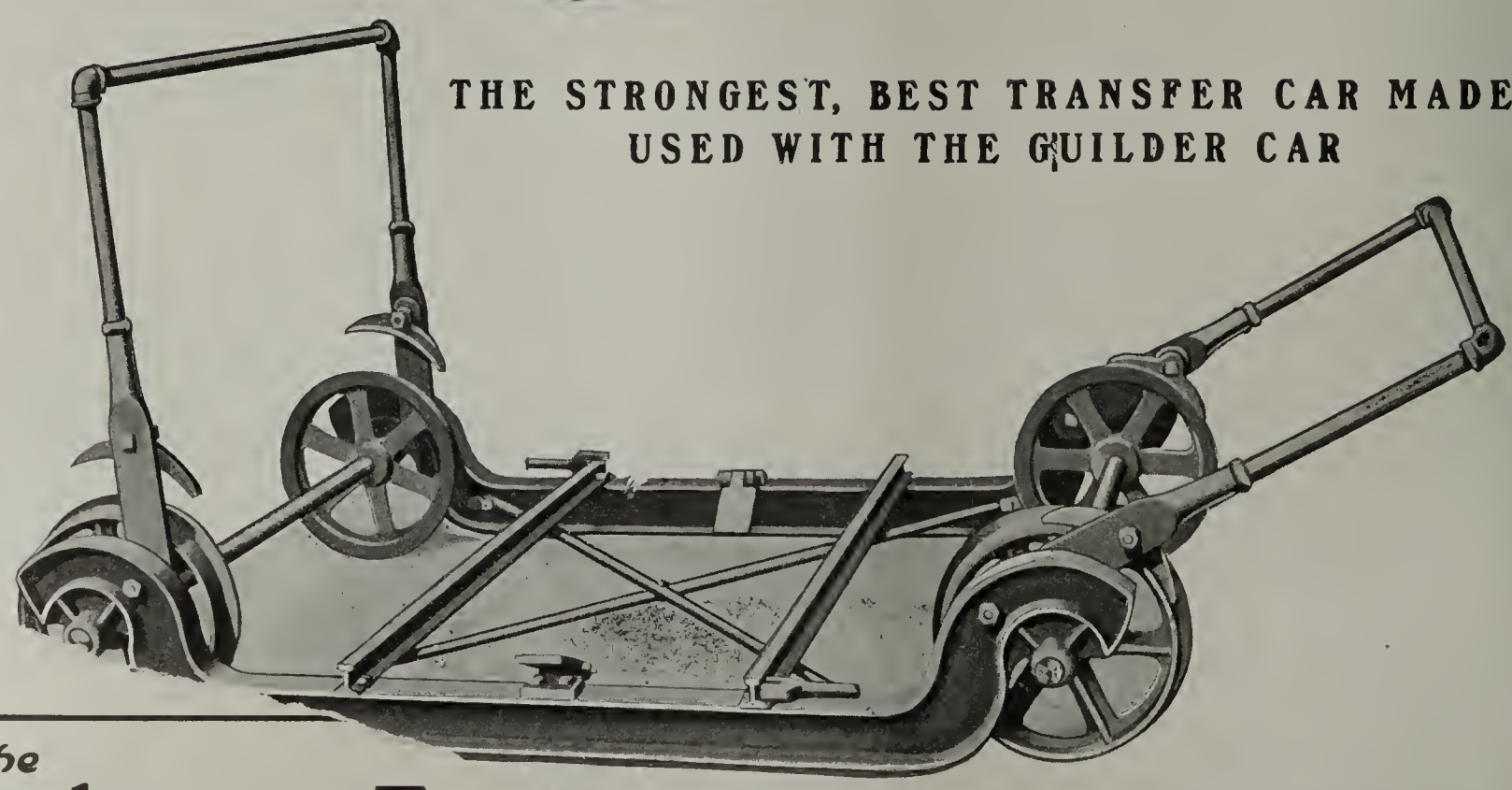

The Anderson Foundry, Plymouth, Ohio, about this system

Southwestern Office, Wilson Building, Da.

CLAY RECORD

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KILNS FOR THE MANUFACTURE OF GOOD BRICK. *)

By J. W. Ball, Toronto, Ont.

I will try to fulfill the demand of the secretary in giving a paper on the subject of kilns suitable for the manufacture of high grade bricks. I do not know why he should choose me for a paper of this description as there are plenty of men present who could deal with the subject in a much abler manner. However, I will do my best, and if it does not come up to your expectations you must look at the raw material.

There are many kinds of kilns on the market to-day for the burning of clayware, viz:—updraft, downdraft, muffle, continuous, semi-continuous, etc. These kilns take various shapes, round, square, rectangular, etc., and all are being used to-day with more or less success.

To burn a high grade of brick successfully in shape, color and soundness, it has to be subjected to certain conditions and the kiln that can produce these conditions most effectively is the kiln most suitable for the manufacture of high grade bricks.

What are the necessary conditions to bring about this desired state of things?

Removal of Water.

The first stage of burning is the removal of the water that is contained in the pores of the clay even after drying. This stage is one that has an important bearing on the final result. In this operation may be produced damage to the brick that no subsequent operation can remedy, and that may lessen or totally destroy their market value. If during this period the fires are pushed to any great extent, it will cause the brick to suddenly expand and forever spoil their density. To have poor circulation (which means insufficient draft, moreover, slow evaporation) is one way to produce scum on the bricks. It is, therefore, necessary during this stage to generate heat slowly yet constantly with a good draft, plenty of air and under no consideration should the temperature be raised above boiling point for the first two or three days.

Heat Slowly and Evenly Raised.

After the watersmoking has been carried through successfully and the kiln is dry, the heat can be slowly and evenly raised with plenty of air passing into the fireboxes to drive the heat through the entire mass of brick.

It is during this stage that all combustible matter is taken out of the brick. A kiln of brick pushed at this stage of burning is likely to be spoilt, but this stage of burning can be very quickly done, providing that good draft is maintained, plenty of air is allowed to pass in to the fireboxes and the firing is done light and often.

Bricks damaged at this stage are likely to show a swelled appearance. Sometimes when broken you will find them blue and black through the section, and very spongy. I have seen brick spoilt at this stage twice their normal size when drawn.

Perhaps you have noticed pieces of brick that show a very porous blue and swelled appearance. This trouble is caused by improper treatment during the oxidation period. The outside crust of the brick has been fused with quick firing and closed up the pores so that the combustible material has had no way of escape and has, therefore, burst, become swelled or discolored in consequence. This stage of burning can be watched and its progress noted by taking out at intervals bricks and breaking them through. At first you will notice a black centre with a greyish border, and as the black centre decreases, the light border increases, when the black has disappeared altogether and the whole mass has reached a greyish color, oxidation period is practically over.

The Hardening Process.

The vitrification or hardening process comes next, when the clay is bonded together and when it attains its maximum density, strength and resistance to abrasion and absorption of water.

To practical men this is the shrinkage period and it is our aim to get the greatest amount of shrinkage without deforming the bricks or causing them to stick together.

There are many more points of importance than those mentioned to produce a high grade brick, viz.:—That at all times there should not be any great change of temperature, but an even and gradual rise of heat with no going back; and the whole mass of brick should be controlled by the dampers.

After the bricks are burnt care should be exercised in cooling to produce a sound and properly annealed brick, and it ought to take as long to cool a brick as to burn it up.

Now, gentlemen, I have given you possibly a crude idea as to how a high grade brick should be burnt. This brings us to our subject, "Kilns Suitable for the Manufacture of High Grade Brick."

*) Paper read before the Convention of the Canadian Clay Products Manufacturers' Association at Brantford, to Introduce the Discussion on Kilns Suitable for the Manufacture of High Grade Brick.

Advantages of the Updraft Kiln.

As I said before, there are many kinds of kilns on the market to-day, all being used with more or less success, but though there are many kinds of kilns there are also more kinds of materials, therefore, the kiln suitable for any particular clay is a matter to be decided by the man on the spot. However, I think it would not be amiss if I give a few of the advantages and disadvantages of the various kinds of kilns used to-day.

The advantages of an updraft are:—

(a) Its large capacity at moderate cost of construction.

(b) Its quickness in cooling.

(c) Its convenience in emptying.

(d) Its low cost of repair, etc.

Its disadvantages are the practical impossibility of burning without considerable waste from cracked, broken, warped and overburnt bricks, also the time and expense in platting and covering down each time a kiln is burnt. Nevertheless, this kind of kiln has a great advantage over the stove kiln in quality and quantity.

Advantages of Continuous Kiln.

The advantages of a continuous kiln are:—

(a) Saving of from 50 to 60 per cent. of fuel.

(b) Larger percentage of hard brick than in the updraft kiln.

(c) Can be operated in all weathers.

Its disadvantages are:—

(a) Large investment in construction before any results are obtained.

(b) The unhealthy conditions to which the men are subjected during drawing and setting hot chambers.

(c) Must be operated continuously to obtain full benefit in fuel economy.

Advantages of Semi-Continuous Kiln.

The advantages of a semi-continuous kiln are that it can be built to any capacity and is more economical in setting and drawing, as the brick can be set on one side and drawn on the other. Conveyors can be used if necessary for both setting and drawing.

The two foregoing kilns are used generally for common brick, but in many places a really good face brick is produced. Of course this kind of kiln with a flashing or bag wall, so that the fuel can be kept out from amongst the brick, will greatly add to its value as a face brick burner, but where cheapness of production is the prevailing feature, these kilns have a great advantage over any other kiln being used to-day.

The Muffle Kiln.

With regard to the muffle kiln. This is used in connection with glazed brick, terra cotta, etc. I have known a few places where it is used for face brick purposes, but its smallness of capacity and the cost of heating through the inner lining makes it too costly to be of any use for face brick purposes.

The Round Down Draft Kiln.

This brings us to the round down draft kiln. This kind of kiln is very extensively used by the sewer pipe makers and also a large number of brickmakers, and is, I believe, a general favorite. This kiln is no doubt the best for small works, and will produce quality as good as any kiln on the market.

Its advantages are:—

(a) Small cost of construction.

(b) Durability.

(c) Less expensive for repairs.

(d) You get a more uniformity of heat passing through the bricks.

For salt glazing and flashing purposes it cannot be beaten.

A great disadvantage to this kiln is its utilization of space on the works as per its capacity.

There are two kinds of this kiln being used to-day, one with the centre stack and one with the stack outside.

The kiln with the centre stack has an advantage over the one with the outside stack. You can burn quicker because the stack is sooner heated up, hence a quicker draft from practically the first start of burning, also the heat that has passed through the bricks has to return via the centre and this affords the centre a better chance of heating up, but this kind of kiln is a little lower in capacity than the one with the stack outside. Yet, if everything is taken into consideration, with its cheapness of construction, the speed in burning, etc., the room the stack takes up is more than compensated, the flue arrangements more than cut in two, and the stack need not be more than 4½ inches thick. I was head burner on a sewer pipe and brick plant with 24 kilns, and 15 of these had 4½ in. stacks in the centre and we could burn anything from 3 to 10 hours quicker than the ones with the stacks outside.

The Rectangular Down Draft Kiln.

Now we come to the rectangular down draft kiln. This kiln has more relations than any other kiln on the market. It is constructed in many different ways; its flueing arrangements are many and varied, but which is right or wrong, I am not going to discuss. My subject is "Kilns Suitable for the Manufacture of High Grade Brick," not what system or whose particular kiln is the best.

Its disadvantages are:—

(a) Its high cost of construction, bracing being especially expensive.

(b) High cost of repairs.

(c) It does not permit of quite so uniform a distribution of heat as the round kiln, but it can be built to a large capacity and utilizes the yard space to the very best advantage.

There are a few features in the down draft kiln I would like to mention. The first thing of importance is the draft. We hear a great deal of talk of draft to-day, a down draft kiln should have plenty of it. A story is told that you can always take a little bit off when you cannot put a little bit on. The draft of a kiln has two purposes, one for the generating of heat and the distribution of the same all through the bricks. The other is to draw away moisture or any harmful gases given off by the bricks. Another feature is that the flueing should be so arranged that the draft is equally divided so that the heat generated in the fire boxes shall pass through the bricks evenly, ensuring an even burn.

Up-Draft and Down-Draft Kilns.

Now, gentlemen, the two kinds of kiln principally used in this Dominion are up-drafts and down-drafts, therefore, perhaps, it would be as well if we compared the two kilns and judged them on their merits to produce a high grade of facing brick and see which of the two kilns is the most suitable for our purpose.

Personally speaking my inclinations lean very strongly towards the down-draft kiln, although I have no doubt there are many present here who favor the up-draft kiln.

Why do I favor the down-draft kiln?

(a) Because it can be heated more evenly and a more steady heat is passing through the whole of the kiln.

(b) Because it is at all times under control.

(c) Because there is less volume of cold air passing into the kiln through the fire boxes during firing and what cold air does pass in comes in contact with that hot zone between lining and bag, and by the time it reaches the bricks it is practically hot, therefore the bricks are not subjected to that sudden change of temperature as in a

up-draft kiln. The bricks, are, therefore, stronger, sounder and not so brittle, also a down-draft kiln is more easily handled during vitrification or hardening period.

(d) Because the top of the kiln is subjected to the intense heat instead of the bottom as in an up-draft.

(e) Because it is possible to get an even colored brick from top to bottom and from sides to centre.

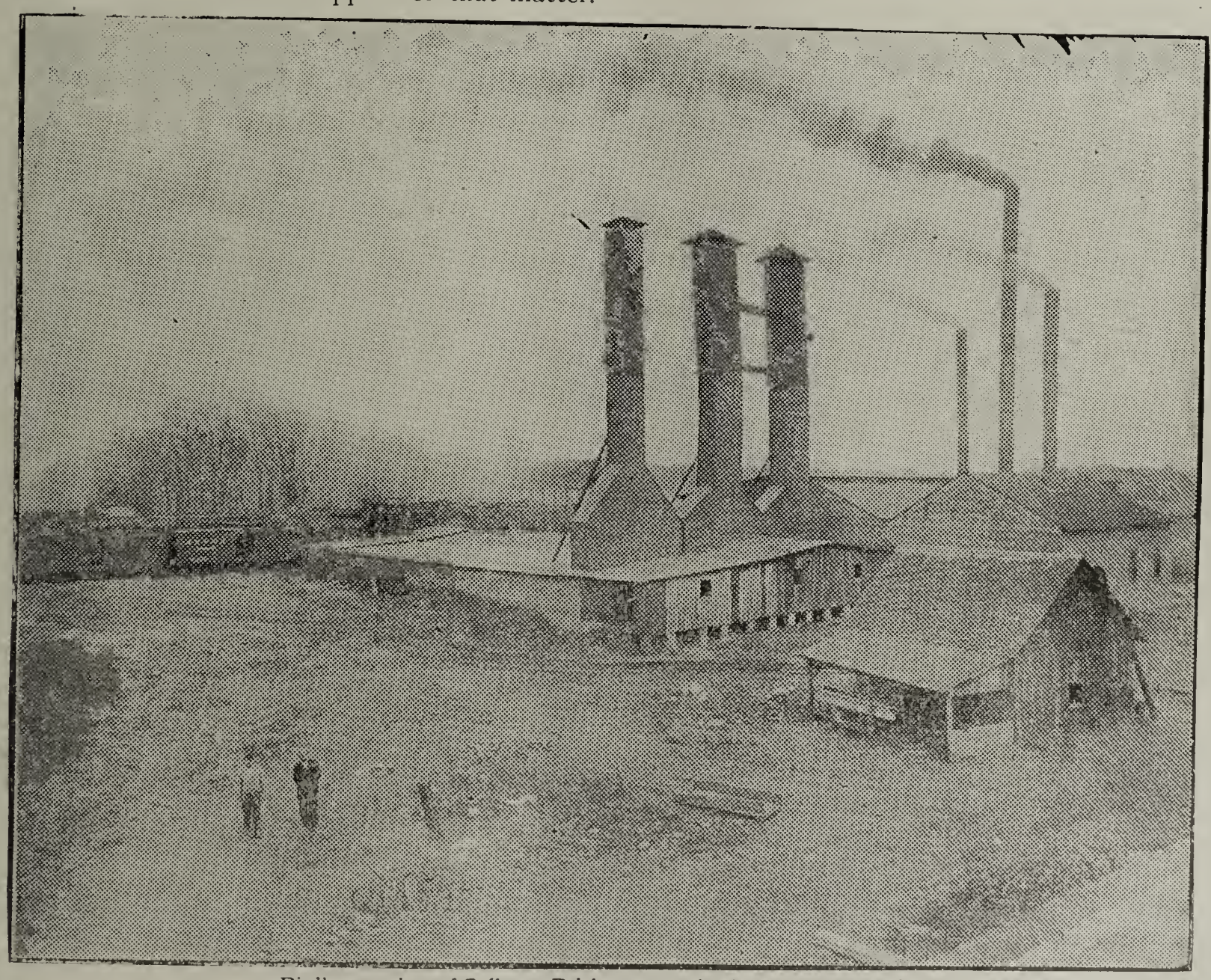
(f) Because the hot gases in a down-draft kiln can be handled more effectively than in an up-draft.

During the finishing stages the draft can be regulated that the gases pass more slowly through the entire mass, hence a saving in fuel. This can be done to a certain extent in an up-draft kiln, but not so efficiently because in an up-draft it is somewhat difficult to find out exactly where the draft is strongest and when you cover down it simply goes somewhere else. I may say this perhaps is a good feature in an up-draft kiln, but you cannot regulate the entire mass so that it effects the whole, but with a down-draft kiln the whole of the draft is confined to one channel or more and with the dampers you can gradually close it until the entire kiln is stopped for that matter. Therefore you have at all times perfect control of the fires, the regulating of the draft, the distribution of the heat to any part of the kiln without any unnecessary labor or cost. The time taken in doing this work is quick and simple and effectual while in the up-draft it is much slower, the cost greater, and by no means reliable, and a source of trouble to burners. When burning is finished in the down draft kiln by the manipulation of the dampers it is an easy matter, if necessary, to raise the heat a few degrees and to hold it so that the bricks can get well annealed before cooling. This in an up-draft kiln is practically impossible, inasmuch as that as soon as you have finished burning your bricks begin to cool and this sometimes is a very serious matter in the manufacture of a high grade brick.

As I said before, I do not intend to suggest whose kiln is the best for this kind of work, but what I do say is this, where quality is the prevailing feature in a concern that the down-draft is the ideal kiln for the production of this class of goods.

There is no doubt in the minds of some here the question of the cost of burning in a down-draft kiln, but this has been discussed before and my paper does not include this matter.

In conclusion I may say that one of the main features in the production of a high grade of brick is whatever kind of kiln you have got, get the man to handle them carefully and wisely, and I think, gentlemen, you will agree with me that the down-draft kiln properly constructed and evenly flued is without doubt the ideal kiln suitable for the manufacture of high grade bricks.



Bird's-eye view of Calhoun Brick company's plant at Calhoun, Ga.

THE CALHOUN BRICK COMPANY.

The Calhoun Brick Co., was organized at Calhoun, Ga., in 1899, since then its success has been phenomenal and from a plant with over $10,000 invested it has grown to be one of Georgia's most important commercial enterprises with a capital and investment of over $125,000. It has long since been an important factor in the growth and progress of Atlanta. The main office of the company is located in the Fourth National Bank Building. The output of the factory

is extensively used in the city in the erection of many of the best buildings.

The plant is located at Calhoun, Ga. There are 175 acres of land, all suitable for making the best high grade brick, from the shale and clay.

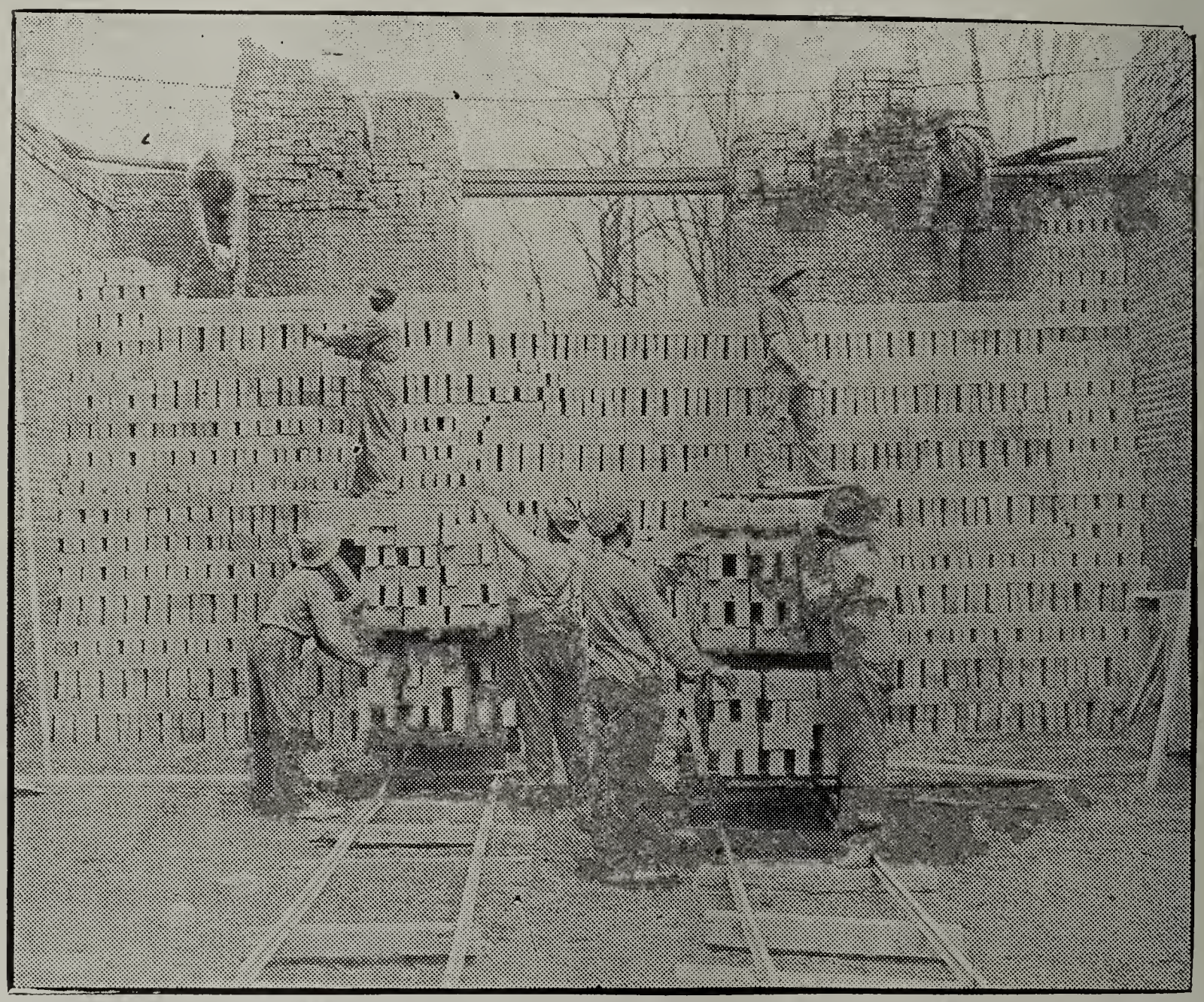
Dr. W. B. Hamby, one of Atlanta's wide awake citizens is president and manager of the company. He is thoroughly acquainted with the building industry and knows the value of good building materials.

John D. Sloan is vice-president and superintendent. He knows how to make brick and is energetic, progressive and a hustler. By his careful ways and close study, he has thoroughly established the reputation of merit of the company's output with the builders and brick users.

New machinery necessary for the rapid manufacture of the brick has been added from time to time. The present capacity of the plant is 75,000 brick a day. The company maintains local yards in the city at which large supplies are kept on hand. They make a specialty of their red front brick, the kind that is now so popular at Atlanta at the present time. They are made of 65 per cent. shale mixed with clay and are of a superior quality, are very lasting and durable.

The Calhoun Brick Co., has an established business in Atlanta which is almost boundless in its scope. But its zenith has not been reached. Each succeeding day brings new customers. Each day the company makes added improvements and facilities for handling the business in a manner pleasing to their customers and patrons.

With the growing scarcity and rapidly increasing high prices of lumber, home builders are being forced to resort to other sources for building material. These considerations have forced brick into service as it has never been before. It has been the means of making brick residences popular in the cities. That this is true is evidenced by the fact that so many brick dwellings are being erected at present, and by the fact that no record in Atlanta shows a greater number of buildings of this nature than that of the present and the past few years.



Brick setting in burning kiln of Calhoun Brick company at Calhoun, Ga.

The far-sightedness of the Calhoun Brick Company has enabled them to foresee these conditions. Seeing these, they at once set about to meet the demand that would be made for brick for the erection of dwelling houses. They had the plant skill and labor for turning out the goods necessary to meet the demand. But still better, they had the material just suited for making a brick that would stand the test and meet all requirements that would be made by this demand.

W. A. Owen is the city salesman. He is sturdy, courteous and enterprising and has won for himself and company, many friends.

COLOMBIAN CLAY MANUFACTURERS.

The following information concerning clay manufactures in, and the imports of clay goods into, Colombia is furnished by Consul-General Jay White, of Bogota:

The processes and products of Colombian clay manufacture are very varied; the latter consisting of a good quality of decorated stoneware for table service, all kinds of cooking utensils, receptacles for water, plant pots, chimney tops, floor tile, drain tile, roofing tile, ornamental, common, and ordinary adobe brick.

Among the poorer classes, most of the cooking utensils consist of unglazed, ordinary red clay articles. Water is brought and kept in a vessel of the same material. In the construction of the cheaper houses, adobe brick is employed; these houses are plastered on the outside and whitewashed; in the more pretentious structures adobe brick is sometimes used for partition walls. In many parts of the country the divsions and highway fences consist of high walls built of adobe brick and capped with the ordinary unglazed burned Spanish tile. In the temperate portions of the country the same class of tile is used for roofing.

Floor tile is also employed to a considerable extent. Recently in Bogota a limited amount of brick pavement has been laid. Brick is also used for sidewalks. In the manufacture of earthenware the work is nearly all done by hand or with the aid of foot-power machinery.

The usual manner of preparing clay for brick and tile is to excavate a circular pit into which the clay is placed and a pair of oxen driven about therein, water being added from time to time until the clay is sufficiently prepared to mold well. The clay is then removed, molded, and either sun dried or placed in kilns and burned. The pit is then refilled and the process repeated.

Roofing and drain tiles are mostly made by hand or in hand presses.

All sorts of kilns are used, including the ordinary Dutch type with furnaces, the entire kiln formed of brick to be burned, and the most elaborate, continuous, up-and-down draft, modern kiln.

The number of yards equipped with machinery in Colombia is small, considering the amount of clay products used. In the city of Bogota there are very few yards with machinery. Up to the present time there has been little or no demand for clay-working machinery, but on the completion by July, 1909, of the Girardot Railway, which will connect Bogota with the Magdalena River, manufacturers of brick will be better able to import machinery, and no doubt a few sales can then be made.

Drying kilns, at Calhoun Brick company.

The latest available statistics showing the imports of clay goods into Colombia are for the year 1905, when the total imports amounted to 1,018,555, of which 720,640 pounds were imported from Germany, and 126,854 pounds from the United States, leaving for all other countries only 171,061. Of the total imports from Germany, tableware, paving bricks, and tiles composed 631,987 pounds. The imports from the United States were as follows, in pounds: Insulators, 1,579; bricks and tiles, 24,006; table service (stoneware, porcelain, and earthenware), 14,876; earthen, china and porcelain ware, other than tableware, 5,140; earthen and stoneware pipes, 77,178; apothecaries' utensils, 1,109.

TEXAS BRICK MANUFACTURERS HOLD MEETING

With a good demand for their product all over the state and the outlook encouraging for better prices in the near future, the members of the Brick Manufacturers Association of Texas, which convened in semi-annual session in the assembly room of the Houston city hall at 10 o'clock July 19th were in a very cheerful frame of mind.

Sunday the visiting delegates were the guests of the Houston members of the association and were delightfully entertained at Bettison's pier and at Galveston. They were conveyed to Galveston in a special coach which left Houston with a regular early morning train. A boat was chartered at Galveston and carried them to Bettison's pier, where they enjoyed an elaborate dinner and a swim in the bay. They returned to Houston Sunday night at 11:30 and after enjoying a good night's rest, wherein Houston's celebrated evening zephyr played a conspicuous part, were in splendid condition Monday morning to discuss the various matters of business which the organization was called together to consider.

W. E. Weatherford of Ferris, first vice president, occupied the chair in the absence of President W. M. Staniforth of Gainesville who was unable to attend the meeting on account of a pressing business engagement. In calling the meeting to order Mr. Weatherford took occasion to thank the Houston members for the entertainment that had been provided for the visitors, declaring that the Houston session had been the most pleasant in the history of the organization.

A number of topics of interest to the brick manufacturers of the state were discussed, but the one which seemed to arouse more interest than the rest was that dealing with the condition of the market in North and South Texas. Du Pont Lyon of Sherman and Sherman S. Brady of Houston, were on the program for papers on this subject, but Mr. Lyon could not attend the meeting and Mr. Brady excused himself on the ground that he had not had time to compile the statistics necessary to an intelligent discussion of the matter.

Brick Prices.

Mr. C. R. Sherrill, a brick manufacturer of Corsicana, enlivened things considerably by taking his brother manufacturers of North Texas to task for selling brick too low. "Conditions in South Texas are fairly good," said he, "but in North Texas they are just the reverse. The manufacturers of that part of the state are selling brick in South Texas cheaper than the brickmakers on the ground can sell it. Adding the freight to the original cost of the brick, they must be selling at a loss. Some of them, perhaps most or all of them, do not know this, because they do not figure the cost of their product as they should; but it is a fact."

Mr. Sherrill's assertion was borne out by Mr. J. W. Jones of Beaumont. The brick people of Dallas, said Mr. Jones, are shipping brick to Beaumont and selling them there for less money than he can afford to put them on the market. He cited instances where buildings are now being constructed of Dallas brick in his city, which brick were delivered there, he said, at a lower price than the Beaumont manufacturers could make them for.

This phase of the business was touched upon by several of the delegates, but no remedy for the conditions complained of was suggeted.

The manufacturers of South Texas seem to be content with the fact that they have a good demand for their products at a better price than obtains in the northern part of the state, and appear to be willing for their competitors of that section to get all the business they can in the coast country. They were a little inclined to chaff the Dallas contingent on the condition of the trade in that division of the state.

Texas Face Brick.

Another subject of interest was the manufacture of "face," or "front," brick in Texas to compete with the St. Louis manufacturers. In the course of the discussion it developed that most of the "face" brick used in Texas are shipped from the Missouri metropolis. Speaking for the "face" brick manufacturers of Texas, Mr. Cal Swartz of the Texas Fire Brick Company of Corsicana said the yards of Texas can turn out as good material as come from the St. Louis kilns. His own firm, he said, had recently closed a contract for 1,500,000 gray face brick which he said would compare with the best of the products of St. Louis or any other place. He admitted, however, that steps will have to be taken to keep this trade at home, agreeing that the bulk of it now goes to St. Louis.

"Keeping the Cost of Production" was another topic of general interest. All the manufacturers admitted the need for a more systematic method of figuring the cost of their products. Several plans were suggested and discussed, but no one especially was indorsed by the association as a whole.

The history of the mud brick was related in an entertaining paper by Mr. M. K. Sachs of Houston. The old mud brick, he said, has had an interesting past, but the future looks far from bright. The improvement in "stiff mud" and dry press machinery has revolutionized the brick business and the end of the old mud brick, Mr. Sachs predicts, is not far off.

The afternoon's session of the association was interesting in many ways. It was brought out that while there was no price cutting on the surface that as a matter of fact some of the makers were giving larger brick than the standard called for and that price cutting was indulged in in this way.

While there was considerable discussion of the price raising question, there was no action taken in the matter, this being left for each manufacturer to decide for himself.

Charge Discrimination.

When the statement was made during the session of the convention that the brick manufacturers of Southwest Texas were discriminating against one another by means of making brick larger than the standard size adopted by

the association several years ago it resulted in quite a discussion between the manufacturers of North Texas and those of South Texas.

The North Texas brick men contended that they have been living up to the standard size of the association, while their competitors in South Texas were making brick in many sizes larger than the standard scale.

It was stated that not any two factories in South Texas were making brick of the same size and that as a result it would be impossible to interchange brick of different factories should the occasion ever arise.

The discussion regarding the alleged violation of the association's standard size brick arose while W. O. Fitch of San Antonio was relating his experience in making sand and lime brick. He stated that the manufacturing of sand and lime brick in Texas had proven a failure and that several concerns which undertook to turn out brick of that character were forced to the wall. It was while he was talking of the competition between the brick manufacturers of the State that the statement was made that the manufacturers of South Texas were disregarding the association's standard size for the manufacture of brick.

"It takes 1,167 Laredo brick to make 1,000 of the brick manufactured at Gonzales," stated one member of the association from Seguin, "and that tends to show the difference in the size of the brick made by the Texas manufacturers."

Method of Cutting Prices

The making of large brick, it was argued, resulted in a benefit to only the owners of buildings, while from the standpoint of the manufacturer it was a method of cutting prices in a way other than actually reducing the sales prices.

During the discussions regarding the size of bricks the secretary was ordered to notify those manufacturers who are not making brick of the uniform size to immediately comply with the standard adopted by the association.

The standard adopted by the association for the manufacture of brick is 2¼x8¼ inches, while some of the large brick being turned out are as much as one-fourth of an inch thicker.

Law Protecting Material Men.

Another important matter which received favorable attention at the hands of the convention was that of endeavoring to secure the passage of a law protecting material men and mechanics as well from loss at the hands of irresponsible contractors.

In his discussion of the lien laws of Texas with reference to the protection afforded the brickmakers and other material men as well, C. R. Sherrill of Corsicana requested the members of the association to urge their representatives to secure the passage of a law similar to that in effect in Missouri.

In their efforts to obtain the passage of such a law, the brick manufacturers will endeavor to secure co-operation of the labor organizations of the State, who are as much interested in the passage of such a law as the material men.

At the last meeting of the association a committee was appointed to look into this matter and recently a motion was adopted requesting the members of the committee to act as quickly as possible in order that the labor organizations might be communicated with as early as possible.

Fred S. Naugle, representing the American Clay Machinery Company of Bucyrus, Ohio, was an interested visitor to the sessions of the Brick Manufacturers' Association. "The past few years have witnessed some remarkable changes in the brick business," said he, "and I believe the next five will bring changes still more wonderful. For ages the brick-making industry stood in one place. Up until 30 years ago most, if not all, our brick were made just as they were made in the time of Pharaoh. Then came the brick-making machine, and the industry was revolutionized. Today we can make hundreds of brick in the time it took to make one years ago. And in no other field that I know of is there so much activity as is manifest at present in the brick machinery industry. Every year brings devices more wonderful than those of the year just gone, and still the machinery people are striving to cut down the time and expense required to make brick. It is hard to say where it will stop. It is certain that the limit of ingenuity has not been reached yet, for men are at work on inventions now which if perfected will make our most modern machines seem crude by comparison."

Mr. Naugle gave an interesting demonstration of a brick setting device manufactured by his house. The demonstration was given at the Princess theatre, and was illustrated with moving pictures. Most of the delegates to the Manufacturers' Association witnessed the exhibition and were unstinted in their praise of the contrivance.

Delegates Present.

The following delegates were in attendance upon the morning session: E. T. Cole, Ferris; W. D. Ferrs, Ennis; M. K. Sachs, Houston; C. R. Sherrill, Corsicana; W. E. Weatherford, Dallas; F. Geldersma, Dayton, Ohio; A. S. Jackson, Carrolton; G. W. Derby, Laredo; W. O. Fitts, San Antonio; W. H. Versey, Brenham; S. S. Brady, Houston; J. M. Harry, Dallas; W. J. and Franklin Greene, Paris; O. O. Jones, St. Louis; W. H. Lighthouse, Houston; P. J. Carle, San Antonio; R. B. Sherrer, Garrison; Cal Swartz, Corsicana; Fred S. Naugle, Bucyrus, Ohio; J. W. Jones, Beaumont; J. S. Brockenbrough, Jr., Waco; A. L. Branson, Marlin; J. O. Atkins, Ferris, and O. G. Pearson, Seguin.

W. E. Weatherford, vice president of the association, who is connected with a big concern at Ferris, but whose office is in Dallas, expressed the views of every one of the delegates present when he informed a reporter that while the demand for brick is good all over the entire state, prices have been a little short of satisfactory since the panic of unpleasant memory. "We hope for better things in the near future, however," said he. "The demand now is every bit as good as it was before the panic, but it will take a little time to get the prices back where they were then."

Exactly the same sentiment was expressed by Andrew Jackson, secretary-treasurer of the Carrolton Press Brick Company of Carrolton, F. J. Carle of the D'Hannis Brick and Tile Company of D'Hannis, and a dozen others who were seen. On the whole the brick men have but little to complain of, with the outlook for the fall trade better than it has been for years.

THE AMERICAN CO.'S DRY PAN DEPARTMENT

Here is a photographic view of the commodious Grinding Pan Department of the largest manufacturers of clay forging machinery in the world. It shows where the dry and wet grinding pans of this concern are made. There are a dozen pans shown on the floor in various stages of completion and in size ranging from a five foot up to a nine foot. These pans are all being built on order and not for stock. Years ago when the American Clay Machinery Co., of Bucyrus, Ohio, U. S. A., made its first pan it was in the corner of their factory, just room enough in which to set up the pan. That original pan was built on new and improved lines. It was a departure from any other appliance and it had distinctive features of merit. That this is true to the letter may be better appreciated when it is stated that the original pan is still in operation. From the small beginning has been built up the largest dry and wet pan factory in the world. Quality is the foundation upon which this big business has been built, and that same watchword "quality" has never been lost sight of in the construction of this company's long line of machinery which includes every machine and appliance for making every kind of clay products by all processes. This pan building department is superintended by a pan expert who helped to build the first pan and has been at it ever since. He is at the head of a crew of workmen, equally capable, who have been building these pans for years. Constantly building pans has made them proficient. There is not only ability for doing things well but the possibility of doing them quickly because of the day in and day out familiarity which their long experience has given them. This not only means a better machine for the buyer but a better price because of the better facilities and expedition in building. It is safe to say that an American Clay Machinery company machine is a better value at twice the price of a less carefully built machine. Clay workers, who have witnessed the construction of machinery in the plant of this company are satisfied of the value that is in the machines. Those who have operated the machines know that the value is there and that the investment pays more than the added cost there might be between a good and a poor machine. Every clay worker in the world is invited to visit this plant and see the care and system with which the machinery is built. It will do more to convince you than a barrel of printers' ink or a dozen letters. The American Clay Machinery Co., of Bucyrus, U. S. A., is by far the largest concern in the world building machinery for making products from clay.

The Dry Pan Department of the American Clay Machinery Co.

John Schurs, of Los Angeles, Cal., is meeting with all kinds of success with his oil burners. We illustrated and described them in the last issue and hope you did not overlook it if you are considering burning brick with oil.

THE VALUE OF THE CLAY PRODUCTS OF ILLINOIS IN 1908.

E. F. Lines, State Geological Survey.

The report on the value of the mineral products of Illinois for 1908 which have been obtained by the State Geological Survey in co-operation with the Federal Survey shows that the clay industries have shared the effect of the financial stringency of 1907. The total of the values reported of the clay products in Illinois for 1908 is $11,425,575 which is $1,794,914 or 13.5 per cent. less than for 1907, when the total was $13,220,489.

Among the leading industries the greatest decrease in the 1908 production as compared with that of 1907 was in the output of common brick, the 1908 total being 25 per cent. less than that for 1907. The average price in 1908 which was $4.34 a thousand was almost exactly the same as in 1907. This low average is due to the large quantity of brick that have been sold in Chicago at very low prices. Outside the influence of the Chicago market the prices of common brick ranged from $6 a thousand to $8 in small towns.

The paving brick industry not only held its own but showed a substantial gain during 1908, the increase over 1907 amounting to 11.8 per cent. The average price per thousand advanced from $11.08 to $11.71. The highest proportionate gain was made by drain tile with an increase of 37 per cent. The figures for sewer pipe show a loss of 22.6 per cent. and for pottery 14.6 per cent.

A summary of the values of clay and the leading clay products for 1907 and 1908 are shown in the following table:

VALUE OF CLAY PRODUCTS IN ILLINOIS IN 1907 AND 1908

Product	1907	1908	Percentage of Increase (+) Decrease (—)
Common brick	$6,499,777	$4,873,122	—25.0
Paving brick	1,405,821	1,572,576	+11.8
Drain tile	1,031,192	1.413,424	+37.0
Sewer pipe	662,487	512,340	—22.6
Pottery	935,312	797,954	—14.6
Miscellaneous	2,685,900	2,256,159	—15.9
Total	$13,220,489	$11,425,575	—13.5
Raw clay	105,703	114,481	+ 8.3

The value of the raw clay is not included in the total value of the clay products for the reason that the major part of the clay is used within the state in the manufacture of sewer pipe, stoneware and terra cotta. The figures for the latter which is one of the leading clay products of the state are not published because of the custom of the Survey not to publish totals in which less than three producers are represented.

The value of all the mineral products of Illinois in 1908 amounted to $130,576,694 as against $152,221,284 in 1907, a loss of 14.2 per cent. It appears therefore that the business of the clay industries last year compared favorably with the mineral industry as a whole and although there was considerable loss in mineral products in Illinois this loss was less than the average for other states in the majority of which the losses amounted to from 20 per cent. to 25 per cent.

The following table shows the values of each of the leading mineral industries in Illinois in 1907 and 1908 and the percentage of gain or loss in 1908.

VALUES OF THE MINERAL INDUSTRIES OF ILLINOIS IN 1907 AND 1908.

Product	Value in 1907	Value in 1908	Percentage of Increase (+) Decrease (—)
Coal	$54,687,382	$49,936,159	— 8.7
Pig iron (est.)	52,229,000	30,135,000	—43.3
Petroleum	16,432,947	22,648,881	+37.8
Clay	13,351,362	11,540,056	—13.5
Spelter (est.)	6,614,608	5,928,792	—10.3
Limestone	3,774,346	3,122,552	—17.3
Portland cement	2,632,576	2,707,044	+ 2.8
Sand & gravel	1,367,653	1,553,020	+13.6
Lime	559,305	393,951	—29.5
Natural gas	143,577	270,360	+88.3
Fluorspar	141,971	192,179	+35.3
Mineral water	91,760	58,904	+35.8
Lead ore (est.)	61,628	24,578	—60.1
Amorphus silica	.....	17,884	.....
Sandstone	14,996	12,218	—18.5
Silver (est.)	1,900	1,356	—28.6
*Miscellaneous	67,164	2,033,760	.....
Total	$152,221,284	$130,576,694	14.2

*Includes 1908, coke and by-products, pyrite, sand-lime brick and natural cement.

Includes 1907, infusorial earth, metallic paint, quartz, sienna, umber and sand lime brick.

In most cases the gain or loss in value is nearly parallel to the gain or loss in quantity. The figures for Portland cement however are a conspicuous exception to this rule. The gain of 2.8 per cent in the value of the Portland cement output in 1908 falls far short of expressing the gain in quantity. This increased from 2,036,093 barrels in 1907 to 3,211,168 in 1908, a gain of 57.7 per cent. The low gain in value is due to the fact that the average price per barrel dropped from $1.29 in 1907 to 84 cents in 1908.

The detailed report for Illinois mineral production in 1908 is shown in circular No. 5 and may be obtained by sending two cents postage to the State Geological Survey, Urbana, Illinois.

NORTH DAKOTA COAL AND CLAY DEPOSITS STUDIED.

North Dakota has vast deposits of clay and extensive fields of lignite in the western part of the state, and those who have given the question of developing the state's resources proper study are convinced that the clay beds and lignite fields will in time furnish the raw material for growing industries and contribute much to the prosperity of the state.

No one in the state has given more attention to the coals and clays than Prof. Earl J. Babcock, dean of the school of mines at Grand Forks.

Under his direction more than fifty methods of briquetting lignite have been worked out in an experimental way. Nearly all will produce briquettes or brick sufficiently tenacious to permit handling and shipping, but Mr. Babcock is not satisfied that any of the methods can be made commercially profitable. He is confident, however, of attaining his object. Then North Dakota, he says, will supply cheap and desirable fuel to the entire north.

Mr. Babcock and his associates have given much attention to the clays and have achieved splendid results. Brick, of course, has been made for many years, but Mr. Babcock wants the state to produce all the sewer and drain tile, enameled brick, fireproof and roofing tile and ornamental terra cotta.

In the state fair booth under the control of the University of North Dakota, he shows sewer pipe, enameled brick and many kinds of tile and terra cotta made in the school of mines, and which he is willing to have subjected to any tests given to similar products.

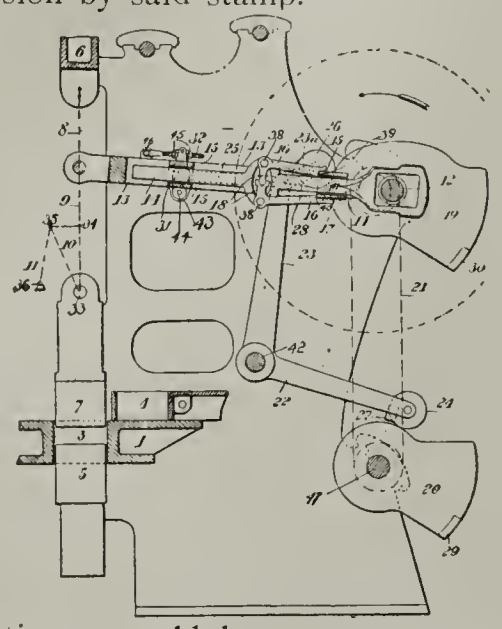
A fine quality of pottery clay is found in several parts of the state. A batch was sent to a well known pottery concern in Zanesville, Ohio, and some beautiful articles have been returned. The ware has a warm gray color of varying tints.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

919,781. Knee-joint Dry Press. Johann Schuring, Jr., Zeitz, Germany. Filed Mar. 2, 1907. Serial No. 360,170.

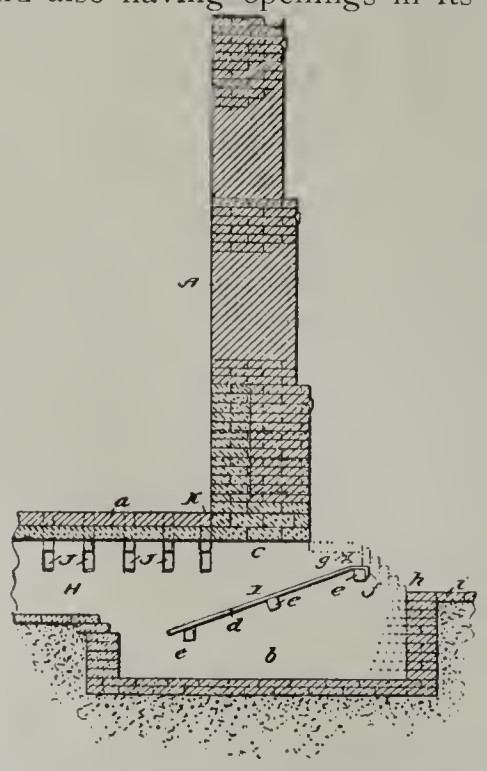
In combination, a mold box, a stamp, link mechanism connected with said stamp, a crank shaft, a connecting device associated with said crank shaft and link mechanism whereby a power compression of the stamp is effected, and means associated with said connecting device to effect a preliminary compression by said stamp.



In combination, a mold box, a stamp, mechanism connected with said stamp, a crank shaft, a connecting device associated with said mechanism and crank shaft whereby a power compression of said stamp is effected, and means associated with said connecting device for effecting a plurality of gravity compression strokes of said stamp.

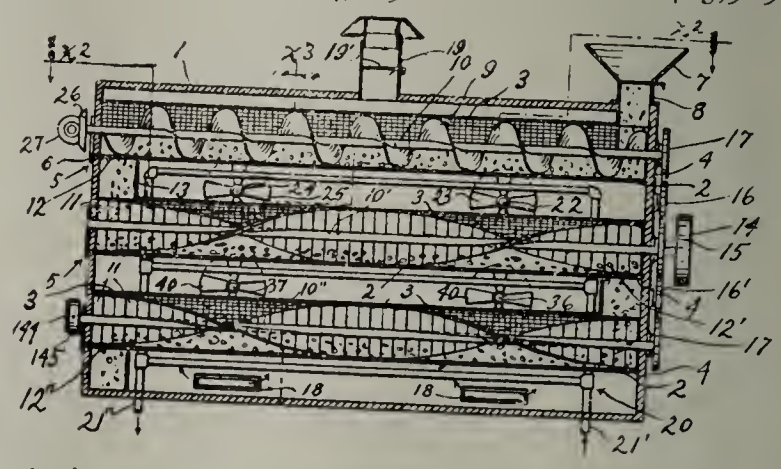
919,902. Kiln. Fred Macarthy, Sayreville, N. J., assignor, of one-half to Sayre & Fisher Company, Sayreville, N. J., a Corporation of New Jersey. Filed Aug. 19, 1908. Serial No. 449,210.

An updraft kiln comprising a chamber having sides B and a floor and also having openings in its floor and said



sides B, dampers arranged on the floor of the chamber and adapted to be moved by means introduced through the openings in the sides B, parallel flues extending horizontally directly below the floor of the chamber, conduits extending laterally outward from the sides of the flues and upwardly and connecting the flues and the said openings in the floor of the chamber, pavings arranged outside of and adjacent said sides B and in a plane below that of the chamber floor, furnaces arranged in alinement and direct communication with the ends of the flues and extending partly inside and partly outside said sides B; each of said furnaces including an outer ash-pit extending considerably below the paving and open at its upper side, an inner fire space, and an inclined grate arranged between said ash-pit and fire space and extending outside the said sides B, and fillings between the ash-pits, extending up to the level of the pavings, and cold air ducts extending inwardly alongside the furnaces and flues and having lateral branches communicating with said conduits.

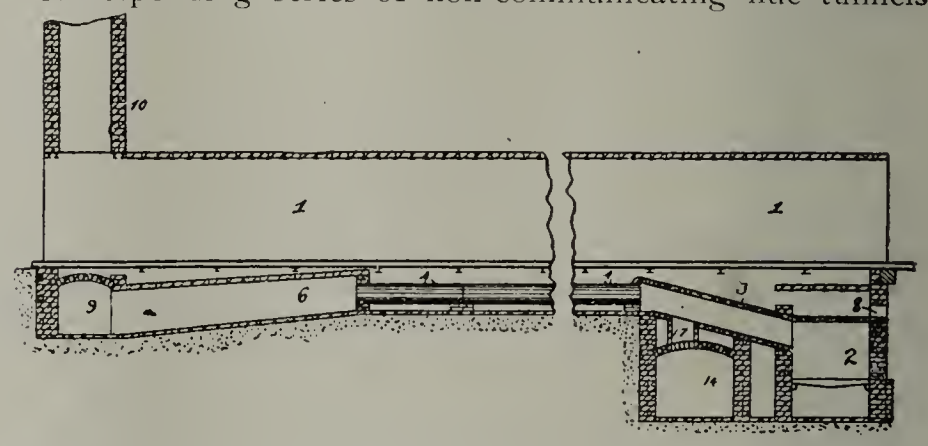
920,050. Drying Apparatus. Robert Grauer, Los Angeles, Cal. Filed Feb. 14, 1908. Serial No. 415,989.



In drying apparatus, in combination, a case forming a drying chamber, a trough therein having a curved perforated bottom, a shaft above said bottom, extending longitudinally thereof, stirring means carried by said shaft adapted to advance material along said trough, a semi cylindrical screen above said trough and inclosing said stirring means, the lower portion of said screen resting upon the upper edge of said trough and means for rotating said shaft to move material along said trough.

921,255. Drier System for Clay Products. Ithamar M. Justice, Dayton, Ohio, assignor to The C. W. Raymond Co., Dayton, Ohio, a Corporation of Ohio. Filed Oct. 5, 1908. Serial No. 456,215.

In a drier, a series of non-communicating drying tunnels, a corresponding series of non-communicating flue tunnels



below said drying tunnels, a system of trackage between the drying tunnels and the flue tunnels, a heat-radiating flue in each of the flue tunnels, said heat-radiating flues being entirely separated from the flue tunnels in which they are located, so that suitable heating space is provided in the flue tunnels for each of the heat-radiating flues, means at one end of the tunnels for generating heat for the heat-radiating flues, means for admitting air to said flue tunnels at the heat-generating end, a cross tunnel at the other end of said tunnels into which the heat-radiating flues discharge, and a stack affording an outlet for said cross tunnel, and for the drying tunnels, the drying tunnels discharging into said stack above the cross tunnel, substantially as specified.

Have you investigated the Marion flue blower as made by the Marion Machine, Foundry and Supply Co. of Marion, Ind., and advertised on page 37 of this issue. If you have not its pretty near time to investigate. We can only put these labor and time saving devices before you.

PACIFIC COAST NEWS ITEMS.

Building operations have not been as heavy in San Francisco during the last month as had been hoped and it is not to be expected that there will be any abnormal developments in this line from now on. The pressing demand for buildings in the downtown district for business purposes has been met and it is declared that there is now much more floor space in the business section than before the fire notwithstanding the fact that there are still a number of lots that have not been built upon. There is still a demand for stores but the need for offices has been more than met and low buildings will be the rule from now on. It was thought a few months ago that there would soon be a large amount of municipal work to be done but some of the largest projects have been held up and it is uncertain when they can be carried out. At a late election the proposition of erecting a new city hall came up, but the idea of establishing a new civic center was defeated and nothing can be done for a time either in the line of building on a new or the old site. Work has commenced on a new hall of justice on Kearny street and contracts have been let for the brick work. This is the largest piece of municipal work now under way.

During the past two weeks there has been an upward turn in the brick market and the low prices that prevailed for a time have been supplanted by the rates that have been in force since about the commencement of the year. Although brick was offered for a time at from $7.50 to $8.50 a thousand it is not thought that much material changed hands at those reduced rates. Most of the contractors had contracted their supplies for the summer at the established rate of $9.00 a thousand and were not in a position to take on added supplies at the figures offered. Several of the large brick making concerns operating in the vicinity of San Francisco are preparing to close down their plants as soon as the present runs of brick are finished as it is not desired to go into the winter season with much of a surplus stock.

During the past month several prominent operators here have been compiling figures designed to show the annual consumption of brick in this market and the capacity of the plants located in the bay region. It is stated that a very conservative estimate of the amounts used will fall a little short of 100,000,000 brick a year while the capacities of the plants, with the additions now being placed in position, will total 300,000,000. Of course a small portion of this output may be shipped to other points but the bulk of it must be marketed here. It can thus be seen that a curtailment of the output is an absolute necessity and the probabilities are that a number of the smaller plants not located advantageously will be closed down entirely. It is only the plants located within easy reach of cheap transportation facilities that are now increasing their equipment and if the present low prices continue it is but a question of time until these plants will be the only ones to be operated.

Gladding, McBean & Co. have been awarded the contract for furnishing the architectural terra cotta to be used in the new Columbia theater building in course of erection at Geary and Mason streets, San Francisco and are now busy turning out the material at the Lincoln plant. Mr. Spier, who is in the employ of the pottery company and Mr. Wood, supervising engineer for the architects, Bliss & Faville, were in Lincoln a short time ago to inspect the material that is being turned out. The polycrome terra cotta work that will be in evidence on this theatre is declared to be superior to any in the country in point of style and richness of color. The general ornamentation is to follow the lines of the ancient style of playhouse architecture and the ceramic work is to be one of the finest examples of the art. The work has been laid out by J. B. DeGolyer, who has charge of the terra cotta work for Gladding, McBean & Co. and the work is being done under the immediate supervision of L. P. Singer, an eastern man, and V. G. Schneider, whose work in modeling is well known both here and in Europe.

One of the largest contracts of the past few months has just been secured by the Western Building Materials Company and this concern will furnish several million brick to be used in the construction of buildings for Mysell-Rollins & Co.

N. Clark & Sons, who operate a plant in East Oakland, have a number of fair-sized contracts now on hand and the plant is working to full capacity. They are now sending terra cotta to San Francisco for the building of Goldberg, Bowen & Co., the wholesale grocers, and are working on a gray pressed brick that will be used in facing the new ten story building of Kohler & Chase, a local music house. The tiling for the roof of the new library at the University of California at Berkeley is also being furnished by this firm.

The Mount Shasta Volcanic Hollow Tile & Cement Co. has commenced operations at Igerna, Cal.

The King City Brick & Enamel Works at Kings City will begin operations as soon as the machinery can be placed in position.

H. H. Peterson has removed his brick plant from Holtville to El Centro and will have it ready for operation again within a very short time.

The California Fireproof Construction Company, which owns a plant at Terra Cotta, Cal., will resume operations there soon after a long shut down. The firm manufactures hollow tile for fireproofing chiefly.

Word has been received here that the Simon Brick Company, of Los Angeles, is branching out and that plans have been made for the establishment of a plant for the manufacture of hollow tile at El Centro, Cal., where some fine clay beds are controlled.

The three new kilns of the Corona Pressed Brick & Terra Cotta Co., of Corona, Cal., have been finished and are being used. Preparations are now being made for the installation of three additional ones as more business is being offered than can be taken care of at the present time. The town of Whittier has just been furnished with over thirty-five miles of sewer pipe from this factory.

The Rainier Face Brick & Clay Co. has been incorporated at Portland, Ore., and work on a factory will be commenced at once.

The Taulatin Brick & Tile Co. has been incorporated recently at Portland, Ore.

ROBERT BINDER DIED SUDDENLY.

Robert Binder, president of the Yoke Vitrified Brick Co., Coffeyville, Kansas, who has been in ill health for about a month, dropped dead at The Lorraine, 203 West Eighth street, where Mr. and Mrs. Binder have been rooming.

Mr. Binder was taken with an attack three days before, brought on by the heat, and was compelled to remain in bed. He had made no complaints of feeling any worse and had been moving around a little, when he suddenly fell over and was dead almost immediately.

Business reverses have caused him to worry a great deal the past few weeks and it was feared his mind was giving away under the strain.

Mr. and Mrs. Binder came here about a year ago from Adrian, Michigan, where the body will probably be taken for burial.

CLAY RECORD.

PUBLISHED SEMI-MONTHLY BY THE

CLAY RECORD PUBLISHING COMPANY

Ninth Floor, Plymouth Building,
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GEORGE H. HARTWELL, EDITOR

SUBSCRIPTIONS

Send One Dollar bill or stamps for United States or Mexico and one dollar fifty cents for all other foreign counties.

Entered as Second-Class Matter, January 25, 1893, at the Post Office, Chicago, Ill. under Act of March 3, 1879

Vol. XXXV. JULY 30, 1909. No. 2

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

It is as easy to be foolish as it is foolish to be easy.

Never condemn a man's foolish action until you get wise to his game.

If you would dodge your creditors don't become famous.

What terrible destruction there would be if men kicked as hard physically as they do mentally.

"Money and trouble are synonymous," says a millionaire. Perhaps they are, but it's a lot easier to borrow trouble.

The man who doesn't know one note from another is always getting next to things that are selling for a song.

It is estimated that of the 14 or 15 million buildings in the United States, less than 10,000 are even moderately fireproof, and less than 1,000 can be called practically fireproof. The wealth destroyed by fires in ordinary years is in excess of the entire value of the fireproof building material produced, such as brick, hollow tile, terra cotta and roofing tile, but with the awakening of public sentiment against the construction of fire-trap buildings it is to be expected that the demand for fireproof building material will increase by leaps and bounds and that in a few years more the greater portion of this waste will be obviated and its value utilized toward the construction of more fireproof buildings. The reduction of insurance premiums and saving in cost of maintenance will in about ten years equal the excess of cost of a practically fireproof building over one not fireproof. Improved methods of construction will do more than legislation to bring insurance rates down, because they will reduce losses and the reduction of fire losses is the surest way to reduce rates.

REVIVAL IN IRON AND STEEL.

R. G. Dun & Co.'s review of trade says:

"No one can now question the substantial character of the revival in the iron and steel trade, which is rising rapidly to high water mark levels. The output of the principal producers already has reached a moderate percentage of full capacity, and railroads as well as builders in leading branches of construction work are in the market with their orders. This wonderful change, in a short period, in the activity of the greatest manufacturing industry of the country; the bright outlook for the crops, that of corn giving promise of an precedented yield; the cheapness of money; and the fact that the tariff bill has been passed by the senate are the conspicuous features of the business situation. Naturally they serve to strengthen the newborn confidence and to encourage new enterprises.

NEW YORK BRICK MARKET STIFFER.

A stiffening in the brick market, with prices remaining firm, characterized the week in the Hudson clay burning industry. The manufacturers are not shipping as plentifully as heretofore, but they are sending down a better quality. The Hudson river yards are now working full time, trying to catch up with the demand, but none of them has any stock ahead to speak of. Locally it is a case of rushing through with the old work to take on new business in the fall. Hardly anybody has any buoyant expectations for the summer. Some distributors complained of having difficulty in getting sufficient trucks to get bricks to jobs. This was not general, however.

HOCKING BRICK PLANT PROGRESSING.

It is stated that the new brick manufacturing plant of the Columbus & Hocking Coal & Iron Co. at the newly-founded town of Kachelmacher, Ohio, is already turning out brick at the rate of from 60,000 to 75,000 a day. Construction on the plant is being pushed rapidly and its completion to the contemplated full capacity of 250,000 a day is declared to be in sight, as this is merely a question of the addition of units of production, each unit representing a daily capacity of 60,000. It is estimated that when completed these works will have had $1,000,000 expended upon them. It is expected to be the largest brick plant in the country, and in time will embrace in its scope of production practically everything in the line of clay products that can be turned out at a profit.

OBITUARY.

Robert Binder, president of the Globe Vitrified Brick Co., Coffeyville, Kansas, dropped dead at the Lorraine, where he and his wife were living. He had been in ill health for about a month. He came from Adrian, Mich., about a year ago and bought the Yoki plant.

FIRE! FIRE!! FIRE!!!

The plant of the West End Brick works at Punxsutawney, Pa., was practically destroyed by fire, causing a loss of $10,000.

The Rome (Ga.) Brick company, located one mile beyond the city limits was totally destroyed by fire, causing a loss of over $50,000. Insurance $30,000. The principal stockholders were Messrs. Rounsville, and Albert McGhee. Reu Rounsville was the manager.

The Miller City (O.) Tile Co., was destroyed by fire. The plant was recently rebuilt and partly covered by insurance.

The plant of the Hanover (O.) Pressed Brick Co., suffered a loss by fire. The damage was about the kilns and kiln sheds.

The plant of the Fremont (Neb.) Granite Brick Co. was practically destroyed by fire causing a loss of $25,000 with $15,000 insurance. Supposed to be started from a spark from a switch engine. The plant was only recently removed from Hastings, Neb., and it will be rebuilt at once. A. H. Farrens is president, L. D. Richards, vice president and Allen D. Hopkins, secretary and manager, C. H. Christensen, treasurer.

MR. RAWSON AN HONORARY MEMBER OF PRESS CLUB OF DES MOINES

Charles A. Rawson, president of the Iowa Pipe and Tile and the Des Moines Brick and Tile companies, and the representative of Grinnell college on the intercollegiate games committee, is the first man in Des Moines to become an honorary member of the Press Club of Des Moines.

Mr. Rawson's application for membership was received by C. C. Nye, secretary of the executive committee of the club. Mr. Rawson is known to every newspaper man in Des Moines and is enthusiastic over the organization now being formed by the members of the press.

Many other Des Moines men now have applications for honorary membership before the executive committee of the club. Over seventy Des Moines men connected with various publications are active members and within the next two weeks it is expected the number will be doubled. Many newspaper editors and reporters from different cites throughout the state have joined as non-resident members.

The entertainment committee of the club met in the club rooms on Locust street to arrange for the mammoth banquet to be tendered Senators Dolliver and Cummins and Congressman J. A. T. Hull when they return from Washington. Fully 300 newspaper men of Iowa are expected to attend the home coming for the Washington delegation.

ACCIDENTS, DAMAGES, ANE LOSSES

John A. McDonald has been appointed receiver for the Dow Brick Co., Columbus, Ohio. It is claimed that the company is perfectly solvent.

Guy Poland was seriously injured at the Coffeyville (Kan.) shale brick works by the machinery being started and his legs being caught and badly mashed.

A suit for $25,000 damages has been filed against the Sheffield (Ia.) Brick & Tile Co. for the death of B. W. Neal, who was killed by dynamite last winter.

A. T. Pittman was painfully injured by an engine running into him and his horse and dump cart at the works of the Iowa Pipe & Tile Co., at Des Moines, Ia.

Martin Brennan was overcome by the heat at the Emmetsville (Ia.) Tile works and fell from the kiln to the ground and sustained severe bruises and several broken ribs.

The Bank of Mountain View has sued the Wheeland Brick Co., a Mountain View Cali company for $10,000 due on a loan where 1,000,000 brick were pledged to pay it.

Edward J. Collins and Seward U. Round have filed their bonds as receivers of the Bartlett Brick Co., Newburgh, N. Y. It is expected the affairs of the company will be straightened out.

The plant of the Zanesville (O.) Tile Co. will be sold as soon as possible by order of the court, and the receiver has been authorized to pay the second dividend of 20 per cent to the creditors. L. E. Dodd was appointed special master commissioner to sell the plant.

Archbishop John J. Glennon has sued the Evans & Howard Fire Brick Co., St. Louis, Mo. for $5,000 damages to the property of the St. James church at 1360 Tamm Ave. He alleges the church property is cracked and undermined at one corner by the company.

THE CLIMAX AT THE POWERS

Unique among modern stage offerings is "The Climax," a drama in three acts by Edward Locke, with a musical refrain by Joseph Carl Breil, which will be presented by Joseph M. Weber's carefully selected players. In "The Climax" three problems are utilized in constructing the foundation of the play, any one of which would provide sufficient material upon which to base the average play. Primarily we have that much discussed question as to whether a Bohemian atmosphere and a stage career ultimately disqualify a woman for association with the more exclusive of her sex. In fact, the eternal question as to the morality of the actress and opera singer.

Secondly, we have the idea, so much exploited of late, that of mental suggestion, whereby the will of one person in some particular instance, becomes so subservient to that of another that a whole line of action may be indicated and carried out. The third problem is that unanswerable question as to whether a woman with a wonderful voice is better engaged in singing lullabies than in electrifying an audience. These ideas are interwoven in "The Climax" forming the most unusual and thoroughly delightful play of the period. The initial performance of this play will be given at Powers' theatre on Monday evening, August 2nd.

"BRICKYARDS MUST GO," IS SLOGAN OF CIVIC BODIES

One of the most universally popular moves Mayor R. W. Speer has made since he went into office is the movement now afoot to drive all brickyards beyond the corporate limits of Denver.

Not only are the people, generally, on the side of the mayor, but he can also count upon the earnest support of all the local civic and commercial organizations.

As a matter of municipal pride and for the benefit of public health, the foremost citizens, allied with the leading business organizations, regardless of partisan feeling or other motives, hasten to assure Mayor Speer that he may have their hearty support to pass his proposed ordinance to move all brickyards from the city by Jan. 1, 1910.

The Chamber of Commerce, the Real Estate Exchange, the State Commercial association, Traffic club and other bodies thoroughly agree with Mayor Speer in his declaration that no modern, beautiful and well conducted city should permit obnoxious brickyards to be maintained within the corporate limits.

"The brickyards must certainly go," says Dr. Frank L. Bartlett, president of the Chamber of Commerce.

"This ordinance expelling them from within the city limits has long been talked of and I sincerely hope Mayor Speer and the council will put it through this time.

"Why, if something isn't done immediately, half the city will be undermined and then the other half will be engulfed. The brickyard owners act as if they owned the entire city and could dig it up to make bricks on our front porches if they so desired.

"We are now talking about making Denver really the 'city beautiful,' but the first important step in that direction will be to drive out the brickyards. They are not only an eyesore in all sections of the city, but they are a menace to public health as well."

The real estate exchange will also give Mayor Speer any assistance he may require to draft and pass an ordinance forbidding the establishment or operation of a brickyard within the city limits of Denver after Jan. 1, 1910.

"I am confident that the members of the real estate exchange, to a man, are in favor of an anti-brickyards ordinance for Denver," says C. A. Johnson, vice president of the real estate exchange.

"The brickyards which are being operated here now have ruined the property for blocks around and they are certainly most unsightly blots on the civic beauty of Denver. But leaving all these things aside, brickyards should not be allowed within the city limits because of their great danger to public health. Now is the time for all real estate dealers and property owners to unite their efforts and see that the brickyards are forced to move out of the city."

"No progressive city in the country permits unsightly brickyards to be operated within the city limits," says W. F. R. Mills, secretary of the chamber of commerce, "and Denver is now filled with these public nuisances. The time has come when the brickyards must move, and such an ordinance will meet with general approval.

"We can never successfully carry out our plans for civic beauty in Denver until all the unsightly brickyards are banished.

"Mayor Speer has surely instituted a popular movement and he will find that he will have all the necessary support to make and enforce such an ordinance."—Denver Post.

COURT ORDERS BRICK COMPANY TO STOP DIGGING

For the time being Judge Kirby has stopped the Louisville (Ky.), Brick Company from excavating portions of what the city's legal department asserts are regularly dedicated city streets. The property in question is in the extreme western end of Portland, where is situated the defendant company's factory and plant and the excavations are made by the company to get the clay subsoil for the making of brick. The action involves the question as to whether the city has lost possession of the property in question through its occupation by others.

The streets said to be disappearing are portions of Missouri avenue, Thirty-ninth street and adjacent alleys. The city has proved that they were dedicated by the town of Portland, some of them as far back as 1812. It is now to be determined whether the property has been held adversely for long enough time to destroy the city's title. Judge Kirby granted a temporary injunction, but withheld decision on the city's plea that he order the defendant to fill in the holes until the case shall have been heard. Chief Judge Kirby's opinion in part follows:

"The defendant admits that it is excavating the land which the plaintiff claims as a portion of Thirty-ninth street, Missouri avenue and the alley between Missouri and Rudd avenues, but insists that said streets and alleys do not exist at that point and its grantors have held the land adversely to the public for more than fifteen years prior to the statute of 1873. In other words, the defendant rests its defense upon the plea of limitation. There is a decided conflict of testimony as to whether the passways were fenced in and held adversely for a sufficient time to divest the public of title, but there can be no doubt that such passways were dedicated to the town of Portland, and there is filed in evidence a copy of a deed by which the defendant acquired the seven tracts of land used in its business, several of which are bounded by the said streets and alleys. In that deed the land, or at least several of the lots are described as bounded by said streets and alleys.

"The property is not valuable, and it is a matter of doubt if the city will ever improve said streets or alleys at this point, or the citizens will ever need the use of it seems the duty of the court to stay the excavation of these passways, nevertheless, under all circumstances, these passways until this action can be heard upon its merits. Upon the other hand a court is not authorized at this time and before a final hearing to require the defendant to fill up said streets and alleys. Motion of the plaintiff for a temporary injunction is sustained."

ROBERT NESCH OFF FOR EUROPE

Robert Nesch, president of the Pittsburg (Kan.) Vitrified Building and Paving Brick company, expects to leave his home in Kansas City for a trip across the waters for a visit in Europe, England, Ireland, Scotland, Wales and France. He will visit St. Gall, Switzerland, the town of his birth and other points in Switzerland. Some of his time will be taken up in the visiting among the brick factories in Germany, France and the British Islands. He expects to be absent about three months and perhaps longer.

The Haigh new system of continuous kilns as designed by H. Haigh, Catskill, N. Y., is attracting considerable attention these days. A large kiln has been recently installed at Evansville, Indiana, which is giving most excellent results.

ALMOST COMPLETE REVIVAL OF CONSTRUCTION ACTIVITY NOTED IN THE NORTHWEST

A resume of the building situation throughout the country is noted in the Improvement Bulletin, an authority for the Northwest, in its monthly review. The Bulletin says:

"Midsummer is at hand, and there is no question that the building and construction interests have realized a complete revival of activities in all directions. Last season was notable for the heavy number of residences constructed in the Northwest, the increase going far toward offsetting the decrease in larger structures, such as office buildings and factories. But this season seems to be about as active in the residence line, while it is decidedly more active in the larger structures, touching about every line from mercantile to fraternal and religious. School buildings are being erected in large numbers, though it may be that there is a slight decline in the extent of them, due to the fact that the demand has been caught up with.

"It is noteworthy that the character of construction this season is of a high average, and that the buildings which are going up, both in cities and in smaller communities, are less and less inclined to be on the cheap order. This is in part a natural result, for it is noticeable that the better buildings, which cost the most and command the highest rent, are the structures which do not lack for tenants, while the cheaper structures are more inclined to command a cheaper class of tenants with more frequent changes.

"The building trades have enjoyed moderately good conditions, so far as weather is concerned, and in other directions, such as freedom from labor troubles, handicaps as to delivery of materials, although delays must necessarily ensue under the prevailing rush of business. Conditions generally are satisfactory, and contractors have not been realizing as much as they should, for there has been keener competition for business, and closer trimming of prices than was justified by the situation.

"As to various materials, they are in about the same relative position as heretofore. Cement shows a steady

THE CLAY-WORKING INDUSTRY OF THE UNITED STATES

A history of the Clay-Working Industry in the United States by Heinrich Ries, Ph. D., and Henry Leighton, A. B., is now off the press of John Wiley & Sons, bookmakers of New York. Prof. Ries is professor of Economic Geology in Cornell University, author of Economic Geology of the United States and author of Clays, their occurances and uses, while Mr. Leighton is assistant economic geologist of the New York Geological Survey.

This book adds another good one to the list of books for the clay trade. It is 8vo., 270 pages, bound in cloth and costs two dollars and fifty cents.

Anyone wanting a copy can order them direct from John Wiley & Sons of the Clay Record. A year's subscription to the Clay Record if ordered from us.

THE SPOKANE SEWER PIPE COMPANY

Spokane Sewer Pipe Company, organized by William M. Colby, of Mason City, Iowa, as president, and his associates, Thomas L. Flemming and W. R. Flemming, of Mason City, and S. J. Boal and F. B. McNeil, of Minneapolis, will erect at a cost of $300,000 on the eastern limits of Spokane the largest sewer pipe and clay products plant in the Pacific Northwest. A site of 15 acres on steam and electric railway lines has been acquired and it is given out that work will begin within 30 days, to have the plant in operation early next January. The output will be 10 cars a day, and the working force will be from 75 to 100 skilled laborers.

The company has 160 acres of clay deposits at Mica, Wash., 15 miles south of Spokane. Mr. McNeil, engineer for the company, has thoroughly explored these beds and finds that the supply is practically inexhaustible. The quality, too, is equal if not superior to any sewer pipe clay in the country. There is an ample supply of red, blue and white clays, such as are used jointly in making the best clay products.

Mr. Colby gave out this statement after closing a deal for the factory site:

"We are building our plant at Spokane instead of at Mica because the location near the city will help solve the labor problem. We have the best of shipping facilities where we are located, street car transportation is available for our employes if they want to live in the city and it is always easier to keep high-class skilled labor in the city than in a small town. Then, it would cost us 75 cents a ton to have our coal hauled to Mica. We can get our raw material hauled here much cheaper than we can haul coal there."

The factory to be erected in Spokane will be the best that mechanical ingenuity can desire and it will be complete and permanent in every detail. The plant will be constructed so that its immense output can be handled at the lowest possible cost and the machinery and equipment will be modern throughout. The company's works will be designed, constructed, equipped and operated by men who have spent years in building and operating the most successful clay properties in America. Some of the products will be sewer pipe, drain pipe, wagon and railroad culvert tile, vitrified glazed water pipe, well curbing and flue lining.

The quantity and quality of the deposits have been thoroughly examined and tested. It has been proved that all the material is practically pure and entirely free from any substance that can be detrimental to its use. The discovery of this deposit will be more fully appreciated when its physical properties are fully understood. The bed of clay is located high above the railroad and has an absolutely perfect natural drainage; it is 20 to 70 feet in depth and is covered by an average drift of less than 12 inches and in many cases will require no stripping.

Physically, as well as chemically, the properties of the clay are excellent, as it pulverizes readily in the dry pan and reaches the press with the expenditure of a small amount of energy. It has been examined in detail; it is a rare deposit of superior quality, unlimited in quantity and perfectly adapted for the business to be conducted successfully. Possibly in the entire northwest no other such property containing raw material equal in quality so admirably located, can be found.

The Boss system of burning brick as advertised on page 37 is again attracting the attention of the brickmakers that wish to burn their ware in an economical way and at the least expense.

NEW USES FOR KANSAS CLAYS

An extensive study of the clays of Kansas to find just how much valuable clay the state of Kansas has and to find new uses for it, it is to be begun by the University of Kansas this summer under the direction of Prof. E. Haworth of the state geological survey.

The university has given a special appropriation for this work in ceramics and the investigation will last through one entire year and a possible second if the reports cannot be finished by that time.

The first move to be taken by the university will be to find out what clays can be found in the state and in what particular section. For example a certain clay good for a certain kind of brick is to be found in Lawrence, another kind at Coffeyville and in a like manner over the entire state.

A party will go out from K. U. in a few weeks to visit every portion of the state where clay is to be found and investigate its quality and quantity so that a complete report on the amount of this soil in the state can be determined and the locations of the various kinds.

Samples of each kind of clay will be gathered from all over Kansas and brought to the university for testing. It will be subjected to all kinds of tests for various qualities so that a report can be made of the quality of the clay from each particular locality.

In their work with the clay, the geologists hope to find new uses for it in a commercial way so that the vast quantities of clay in the state can be turned into wealth in an even larger way than it has been in the past through the making of brick.

A large kiln for the burning of the clay is to be put up at the university and will be used in making the tests of the clays from over the state. This fire test is one of the most important known in the study of ceramics.

In additon to the use of the kiln for commercial purposes and testing the quality of clay, the kiln will be used by the Fine Arts students of the university under Professor Griffith who will have a class in clay working.

They will make all kinds of models out of the clay and burn them in the experimental kiln.

Prof. Haworth is working out the details of the clay investigations now and will be prepared to announce more complete details later.

FIRM ENTERTAINS SALESMEN

Brazil, Ind.—A meeting of the selling organization of the Hydraulic Press Brick company for the states of Missouri, Illinois, Wisconsin, Michigan and Indiana, met in this city recently and were guests of the officials of the plant. The visiting representatives were Harry Walters, fourth vice president, and C. L. Schutte, F. A. Schutte and H. G. Browstead, sales agents of Chicago; Frank C. Aschemeyer, sales manager, St. Louis, and C. A. Gunn, sales manager, Milwaukee.

BRICK MAN WINS

Judge Troup has granted J. H. Krittenbrink a writ of mandamus compelling the city building inspector to issue him a permit to erect a brick kiln on his property just southwest of Creighton's first addition. The writ is issued on the grounds that the city ordinance forbidding the erection and operation of any more kilns within the city limits is an arbitrary and unfair exercise of the city's police power and as such is invalid.

The Scott Manufacturing Co., 3rd National Bank Bldg., St. Louis, Mo., are offering some extra inducements in their advertisements as will be seen on page 35 of this issue.

SAND OR LIME BRICK OR BLOCK NEWS

The Fremont (Neb.) Granite Brick Co. will rebuild at once their plant which recently burned to the ground. The plant will be in operation again in October. A. H. Farrens is president of the company and Allen Hopkins secretary and manager.

Gottleib Swerner has begun the manufacture of brick from cinders and cement by his own process at Manitowoc, Wis.

H. C. McIntire is authority for the statement that a plant for the manufacture of brick made out of cement, will be built at Beloit, Wis. He expects to make waterproof brick for $11.00 per thousand and common brick for $6.00.

The Raton (N. Mexico) Cement Block and Brick Co. is now making brick and are now furnishing them for the Miners' Hospital and other buildings.

Fred Groscup of Indiana has arrived at Lamro, S. Dak., with his new brick and tile making machinery and begun the making of cement brick, etc.

The Excelsior Concrete Co., Brooklyn, N. Y. has been incorporated with $5,000 capital stock, to make cement brick. Incorporators are John Campbell, 1433 47th St., Claude S. Sherwood and Wm. A. Thorn.

The stockholders of the Wilkesbarre (Pa.) Cement Brick Co., whose plant was destroyed by fire some weeks ago, have decided to erect a new plant better equipped than the old one. J. E. McKeon is president and George Russell, secretary of the company.

The stockholders of the International Sand-Lime Brick and Machinery Co., 90 West St., New York, voted to increase the capital stock of the company from $100,000 to $250,000, and to correspondingly enlarge their business.

POTTERY PLANT FOR SAVANNAH

From letters which have recently passed through the hands of Secretary Gray of the Chamber of Commerce, there seems to be great likelihood that Savannah may add a pottery plant to the already long list of her manufacturing establishments.

A short time ago a letter was received from a resident of Trenton, N. J., making inquiry as to the local conditions with regard to the pottery manufacturing business, the writer stating that he contemplated the establishment of a pottery plant in Savannah provided all things proved favorable. Inquiry was thereupon made by Mr. Gray into the matter, and a reply favorable to the enterprise was made. As yet no definite result has been reached, but there seems to be every good reason for supposing that something will be soon done in the matter.

Clay suitable for pottery purposes is to be found throughout Georgia, and this branch of business has increased extensively in late years. The clay mines of the Kaolin Mining company, located in the vicinity of McIntyre, are productive of clay which is eminently suitable for the manufacture of such articles of pottery as are used in hotels and similar places, and of sanitary and porcelain goods. There are large deposits of clay throughout the state, and although most of it contains too high a percentage of iron to be useful in high grade pottery, experts have succeeded in producing a process whereby it may be utilized for many purposes, and in some cases the iron has been almost eliminated.

With the low cost of raw material, the low rates by rail upon such goods, the wonderful harbor facilities, which this city possesses, Savannah should prove a formidable competitor in the pottery trade, and there seems every reason for believing that the enterprise will pay. With all the natural advantages possessed by this city taken into consideration, it is even possible that the foreign pottery market might be invaded with success.

MISCELLANEOUS ITEMS.

The Bloomsburg (Pa.) Brick Works have started making brick and will be kept busy until fall.

G. W. Oaks of Columbus Junction, Ia., is enlarging his tile factory on account of the great demand for brick and tile.

The brick makers of the Stipes and Barr yards at Urbana, Ill., have joined the ranks of the Twin City Federation of Labor.

L. W. Ray of Oklahoma City, is considering the building of a 10,000 daily capacity brick plant at Paducah, Texas.

W. C. Hargrove of the 1st. Nat. Bank, Pittsburg, Texas, is organizing with others a brick, tile and pottery plant; capital $10,000.

The United States Engineering Co., St. Louis, Mo., is establishing a plant for the manufacture of buff, gray and fire brick, near Mobile, Ala.

The Streator (Ill.) Clay Mfg. Co. will start to rebuild their plant the first of August as the buildings are completed and machinery nearly installed.

The Wabash Clay Co., Veedersburg, Ind., sold 1,000,000 paving brick at Pana, Ill., and same is now being shipped. The factory will soon be started again.

The Kentucky Development Co., Wickliffe, Ky., has been organized to manufacture and ship clays. E. C. Weston is general manager and H. R. Warden secretary of the company.

George F. Hughes and others have bought 160 acres of Clay land adjoining the plant of the Farmer's Cooperative Brick & Tile Co. at Mason City, Ia., and will build another large plant in that city.

The Columbus (Ga.) Fire Brick Co., has been incorporated with $15,000; Andrew L. Crawford, president. They have taken over the Crawford plant at Girard, Ala., and will enlarge and increase the output.

The Ladysmith (Wis.) Brick & Tile Co. is doing a rushing business. They recently closed an order for 2,500,000 brick for the Ballou Sulphite plant and are now working on the order.

The Fromberg (Mont.) Pressed Brick Co. received within the week orders for 1,000,000 pressed brick for Billings. It is expected the plant will be enlarged to keep up with the demand. Frank H. Church, of Billings, is secretary and general manager.

John D. Tolle has purchased the site of the LaHarpe (Kansas) Brick Co. and will add it to his farm which is adjoining. The machinery and buildings are all to be removed. The plant was burned and the company went into the hands of a receiver to be closed out and the estate settled.

The Barr Clay Co., Streator, Ill., has had a new power station put into their plant, by the Allis-Chalmers Co.

The Salina (Kan.) Vitrified Brick Co., is doing the best business in the history of the organization.

The Rensselaer (N. Y.) Brick Co., has started to work and gradually plans to increase its force.

The National Silica Co., East Liverpool, O., will increase its capital stock from $40,000 to $100,000.

Branhall Bros., Durant, Okla., are now burning their first kiln of brick. Their new plant makes 60,000 brick daily.

The Corning (N. Y.) Brick, Terra Cotta & Tile Co., have bought the Bradley farm and will use the large shale deposits there located.

The Birmingham (Mich.) Brick & Tile Co. are running full blast making brick and tile and the farmers are coming 20 miles for tile of all sizes.

The Carvallis (Ore.) Brick & Tile works in order to keep up with the demands has just electrified the plant so it now turns out 20,000 brick daily.

The Paola (Kan.) Brick & Tile works recently bought by M. J. Lee of Crawfordsville, Ind., will soon be incorporated as the M. J. Lee Brick & Tile works. The plant is being overhauled from top to bottom.

The Improved Brick Co. has been organized at Evanston, beginning with $250,000 capital stock. F. A. Druehl of Salt Lake City, is the Utah representative. The plant is in Salt Lake City.

Albion, Ill., is to have the third brick factory. L. L. Emmerson of Mt. Vernon, is the promoter of the enterprise. Engineers are now surveying and work will be started at once.

The Mt. Union (Pa.) Silica Brick Co., have purchased additional ground adjacent to their works and will build an addition to the plant. They contemplate making extensive improvements later.

The Fee Fee Brick Mfg. & Investment Co. was incorporated in St. Louis, Mo., with $100,000 capital stock to build a brick plant on the Rock Island Ry., seven miles from the city. The incorporators are H. F. Rodgers, Wm. C. Burke, and Wm. L. Rodgers of St. Louis, Eben Rodgers and S. A. Caldwell of Alton, Ill.

The Union Brick Co., of Cherryvale, Kansas, are expanding and soon will build a paving brick plant at Independence to be known as the Kansas Paving Brick Co. The business will be managed largely from the Cherryvale office.

Fred Baum, who has disposed of the Orestes Drain Tile works, will with his father Calvin Baum, locate a new factory at Sweetser, Ind., where his father owns the Sweetser Drain Tile Co. They are now putting in the foundations.

Haigh's New System of Continuous Kiln **Arranged to Suit all Locations**

These Kilns can be seen burning Roofing Tile, Drain Tile, Dry Pressed Facing, Fire, Paving and Common Building Brick

Points of Superiority: Cheapness in construction. Easy to understaud and operate. Perfectly free from any nuisance. Will save more than one-half of the fuel used on other Kilns Specially adapted for Utilizing Waste Heat for Drying Purposes, and which is being done most successfully

Address, H. HAIGH, Catskill, N. Y.

The J. S. Morgan Brick Works at Albany, Oregon, has been purchased by Morgan Brothers.

The Minden (Nebr.) Brick works has been bought by C. E. Lockwood of Petersburg, who will operate them.

The Pennsylvania Coal Co. of Milwaukee, Wis., has agreed to purchase the entire output of the Hollandale Brick works.

A company has been organized to make fire brick at Alta Placer Co., Cal. A fine body of clay has been found on the Little Bear river.

The Granton Mfg. Co., of New Durham, N. Y., is to erect a plant with 12 million brick annual capacity, under patents of Hiram H. Walsh.

The Slater Brick Co., Billings, Mont., have burned their first kiln of brick at their new yard. The manufacture of paving brick will be tried in the fall.

The Empire Brick Co., Olean, N. Y., has been incorporated with $15,000 capital stock by Henry Hasbrouck, F. T. Bartlett and H. S. Sartwell, all of Olean.

The Fort Smith (Ark.) Vitrified Brick Co. have purchased an automobile to enable them to make quick time between their office and their various interests in the city.

The Chicago Sewer Pipe Co., Brazil, Ind., are repairing and putting in tile machinery into their pottery plant so as to make drain tile. Martin W. Lauer is manager of the company.

The National Builders Supply Co., Oklahoma City. Okla., has been incorporated with $10,000 capital stock, by A. M. Lutes, George C. Gray and G. Lutes, all of Oklahoma City.

The Dublin (Ind.) Tile & Novelty Co., has been organized with $10,000 capital stock. The directors are I. Fricker, E. M. Evans and C. E. McKee. The plant is to be located at Dublin.

The Royal Brick Co., Connellsville, Pa., has all of its machinery installed in the plant on the Hatfield farm, two miles from town. The machines will make 60,000 brick daily and will be in operation Aug. 10th. C. W. La Clair of Uniontown, E. L. Sherrick and Geo. W. Halfield of Connellsville, F. M. Richey, Jr., and E. S. Richey of Pennsville, are interested.

F. M. Harrell & Sons will establish a brick and tile factory at Rockport, Ky.

N. K. Freeman and associates contemplate the establishing of a brick plant at McDade, Texas, daily capacity 20,000 brick.

Mrs. Georgiana Buckley of Montrose Col., is one of the largest pressed brick manufacturers in the west. She is a widow and is her own manager.

The Harbison-Walker Refractory Co.'s brick plants are very busy and have heavy orders ahead and are making heavy shipments.

The Stegmayer Enamel Brick Co., owned by Middletown, Ct., people will start their plant at Perth Amboy, N. J., which has been idle for two years.

The construction of the work on the mammoth new kiln of the Shackleford Brick Co.'s plant at Des Moines, Ia., has been started.

E. C. Murphy has made a proposition to the Chamber of Commerce of Hobart, Okla., in reference to putting up a brick works at that place. It is quite likely that his requirements will be met.

The Giddings (Texas) Pressed Brick & Gin Co. has been incorporated with $30,000 capital stock. Incorporators, J. G. Kapper, W. O. Bowers and Andreas Bittmer and others.

J. H. Berry of Atchison, Kansas, who is one of the owners of the Leavenworth Brick works, states the first kilns have been burned and that the brick are very good, that they are making many improvements so that the plant will be in splendid conditon very soon.

FOR SALE
COLUMBIA CLAY WORKS

Entire Sewer Pipe Plant and Clay Mine, located near Columbia, Ill., being only 4 miles from St. Louis, on Mobile & Ohio R. R.
Private Switch and Locomotive.
Unlimited Supply of Clay.
For Particulars, Address:

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We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue W. C.

American Process Co.,
68 William St. NEW YORK CITY

After a three years' suspension the Rock Springs Pottery works, Maryland, has resumed.

The Burke Brick Co., Ft. Smith, Ark., have turned down orders for over two million brick on account of not being able to furnish them. They will now enlarge the capacity of the plant.

The Rocky Mountain Fire Brick Co., Salt Lake City, Utah, has been incorporated with $250,000 capital stock. L. O. Ensign is president, A. F. Greaves-Walker vice president, S. L. Ensign, Jr., secretary, John W. Ensign, treasurer. They will make brick, tile and crucibles.

E. J. Owen of the Owen China Co., of Minerva and East Liverpool, O., is considering the building of another large plant in the vicnity of Big Rapids, Mich., so as to take care of the trade from Michigan and Wisconsin. Splendid clays have been found there.

The Sam'l J. Vail Co., Hammond Bldg., Detroit, Mich., have elected Burt Morley, secretary and treasurer of this well known organization, and the management has added considerable to their already large line of brick, tile, terra cotta and other building materials. Samuel J. Vail is president of the company.

The Vulcan Brick Co., which has been equipping the old Porter yard at Athens, N. Y., has made it one of the best yards on the Hudson river. They are now making brick from the hill and as soon as same is cut down two more machines will be added. Wm. E. Fitzgerald is the manager.

D. G. Heiser will locate a brick and tile factory at Chatfield, Ohio.

Mayer Bros. will establish a plant at Frostburg, Md., for the manufacture of building and paving brick.

John Gibson of Fromberg, Mont., is thinking of starting a brick yard at Bear Creek.

The Melbourne (Ia.) Brick & Tile works has been sold by Charles Morehouse of Des Moines, Ia., to S. R. Gawthrow.

The Sterling Brick Co., Olean, N. Y., has been organized with $150,000 capital stock. Incorporators are C. R. Bard, H. Hasbrouck and F. L. Bartlett.

The Northwest Pottery Co., has been organized at Golden, Colo., with $60,000 capital stock. The incorporators are O. T. Ellis, William Kurlow and J. F. Hunt.

The plant of the Columbia Clay Works at Columbia, Ills., is for sale, on page 34 can be seen the announcement of same. This is a good plant with plenty of fine materials to work upon.

The Kramig Tile Co., Cincinnati, Ohio, has been incorporated with $10,000 capital stock by John G. Gartner, Robert S. Kramig, Charles A. Schooni, Edwin G. Pick and Alma H. Halstrick.

The Adams Bros.-Paynes Co., Lynchburg, Va., have purchased another complete soft mud brick plant which they will install at their plant at Deacon, on the C. & O. Ry. The capacity will be 100,000 brick daily.

The Carlyle Brick Co., Portsmouth, Ohio, are shipping brick to Chicago. Within the last month 940,000 brick were sent there to fill orders. The plant has been idle but four days in six years.

The Andrus Brick Press Makes Brick Every Day

Been doing it 20 years.

Strong, Simple and Capable.

24 in operation in St. Louis District.

INVESTIGATE

Scott Manufacturing Co.,

1815 Third National Bank Building, St. Louis, Mo.

FOR SALE

One power Repress, in number one condition, used only but a short time; capacity 10000 per day. Ask for full particulars.

American Enameled Brick & Tile Co.
1 Madison Ave. New York

POSITION WANTED

By an up-to-date man as manager or Supt. of paving brick plant, thoroughly practical and experienced in every detail of the business, plant construction, kiln buildiug, and handling all classes of labor. A1 references. Address B 4
Care Clay Record, Chicago

Second-Hand Brick Machinery For Sale

1 two-mold brick press.
1 three-mold brick press.
1 four-mold brick press.
1 Freise stiff-mud auger machine, pug mill and cutter.
1 dry press mixer.
2 small engines.
Let us know your wants.

Scott Manufacturing Company,
1811 Third National Bank Bldg. St. Louis, Mo.

Brick Plant for Sale or Lease

A cenveniently located brick plant on the main channel of the James River, 90 miles from Richmond, 18 miles to Newport News, and 40 miles to Norfolk, all having a good steady market for brick. Easy transportation for large boats. Want to see plant in operation. Therefore would make very easy terms. Address MRS. AGNES L. TURNER,
Ferguson's Wharf, James River, Va.

FOR SALE

Profitable brick plant and business; 20,000 capacity. 4-mold Boyd press; complete equipment. Splendid reputation. Economical situation. Supplies this section; no competition; a money-making plant. Owners have no other interests.

Address Durango Pressed Brick Co.,
Durango, Colo.

FOR SALE OR LEASE

A southern Minnesota Brick and Tile Plant, complete in running order; has done a good business last year. Good reason for selling. Address
Minnesota, care Clay Record,
Chicago, Ill.

FOR SALE

One No. 20 Cyclone Disintegrator, made by the C. W. Raymond Co. Has been used about two weeks. Practically new. Address
COLUMBIA BRICK & PLASTER CO.
North East. Md.

POSITION WANTED

As general superintendent or general manager of a large brick works or the construction of such. Have twenty years practical experience and thorough knowledge of the business.
Address Brick Supt.,
P. O. Box 81, Coffeyville, Kans.

WANTED

A first-class Engineer who can handle a corliss engine and look after machinery in brick plant. Must be a man of ability, later full charge of plant will be given to him if satisfactor. Will pay $900 a year to start.
Address "B E" Care of Clay Record, Chicago.

WANTED

One second-hand medium size steam shovel for handling clay or sand.
Address E. J. KELLER,
Lexington, Okla.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE

Brick and tile plant; coal and potters' clay mine; all combined in active operation; new machiuery, none better; coal and clay, unlimited quantity; superior in quality; suitable for fire brick, enamel brick or fine face brick, terra cotta, tile, sewer pipe, stone ware; and all high refractory material. As to proportion of strata used, it is 25 ft. thick rock top and easy to mine. Clays burn white, buff, gray, brown, and also makes a fine spreckled manganese brick. As to proportion of clay used—best clay in Illinois. Railroad runs direct through center of 900 acres; direct to St. Louis and Chicago. Reason for sale, owner crippled; will sell on easy payments, trade for good real estate, or lease to good, experienced men with capital to operate and increase business: Address,

H. T M.,
Care of Clay Record, Chicago.

FORCED FOR SALE

Brick yard for sale within six miles of Broad Street Station, Philadelphia, Pa.. every improvement, Penn. Ry. sidings into yard. In operation for orders for about three million brick. Address:

A. B. Co,
Care of Clay Record, Chicago.

SECOND HAND BRICK MACHINERY FOR SALE

8,000 new fire brick; 12,000 second hand fire brick.
140 single Grates as good as new, size 3 ft. 9 in.
18 Kiln doors on frames.
60 double Grates, size 3 ft.
10 plain fire doors.
5 Brick Trucks.
5 Brick Wheel Barrows.
One 40 H. P. Engine.
One 40 H. P. Boiler in good condition.
Several Pumps. One Bottom Dump Car. 800 ft. Small Rail. 2 Switches. 60 ft. 8 inch Canvas Beltiug. 52 ft. 6 inch Belting, used one year.
Address,

HENRY EHLERS & BRO.,
Watkins, Minn.

DRYER CARS

We have on hand a lot of secoud hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, Ohio

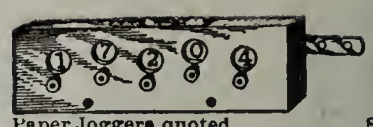
FOR SALE

One hardening cylinder, 72 ft. long, 6 ft. diameter.
One 4-Mold Andrus brick press.
One 9-foot Scott Dry Pan.
One Cedar Rapids Sand Dryer.
25 sand lime brick cars, 3 ft. by 5 ft. top.
2 transfer cars all in good condition.

MORGAN BRICK CO.
Norristown, Pa.

FOR SALE

150 Iron Flat Trucks for Cement, Tile or Brick Yard.
One 70-inch Buffalo Forge Fan.
One 180 H. P. Heine Boiler
Two Freight Elevators
The above machinery is in good condition and at a very low price. S. KRUG WRECKING CO.,
Nebraska City, Neb.



No better made, cut from $8 and $10, to
4 Wheel, $3.00
5 Wheel, $3.25
Guaranteed.
Paper Joggers quoted. Sold by all dealers
R. A. HART, 41 White St., BATTLE CREEK, MICH

FOR SALE

One four-mold Ross-Keller Brick Press in good working condition. Has only beeu used one year.

Chisholm, Boyd & White Co.,
57th and Wallace Sts., Chicago.

PLANT FOR SALE

Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capabity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7 00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles Cheap fuel and labor; can operate with steam dryer year around. Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments

W. L. JONES,
Lock Box 5, Williamsburg, Va.

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick.
Address,

FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio

Address A. B. care Clay Record.
Chicago, Ill.

FOR SALE

I have a Brick and Tile Plant costing $20,000, Electric Power, Steam Dryer. Make soft mud and stiff mud brick and drain tile. I want a man with a few thousand dollars to take one-half interest in the business. If you are looking for a good chance to get into business by investing at 50 cents on the dollar, address

J. J. MILLER,
Benton Harbor, Mich.

FOR SALE CHEAP

One Bullick 100 H. P. Motor, one 9 foot Raymond Pug Mill, one 18 H.P. Gasoline Engine. All nearly new. Address

KIAMENSI CLAY CO.,
Newport Del.

FOR SALE

New Sand Lime Brick Hardening Cylinder, 6 feet diameter by 68 feet long. One removable head. Immediate shipment.

FRANKLIN BOILER WORKS CO.,
Troy, N. Y.

THE BOSS SYSTEM OF BURNING BRICK

Involves the ORIGINAL PRINCIPLE of applying AIR UNDER PRESSURE

Absolute control of heat in kiln. **Burns all first-class hard brick.**
Applies to any style of kiln. **40% reduction in fuel cost.**

JOHN C. BOSS, Monger Building, ELKHART, IND.
WRITE FOR CATALOG

Do Your Brick Turn White?
HERE IS THE REMEDY.
PRECIPITATED

Carbonate (K.B. C.F.H.) **of Barytes**

The only preventative for scum and discoloration on facing Brick and Terra Cotta; neutralizing the Sulphate of Lime in the Clay and Water.

Circulars and Particulars on Application.

GABRIEL & SCHALL
205 Pearl Street NEW YORK P. O. Box 1712

Twenty long years of time and weather have tried out Ricketson's famous Red Brick" Brand

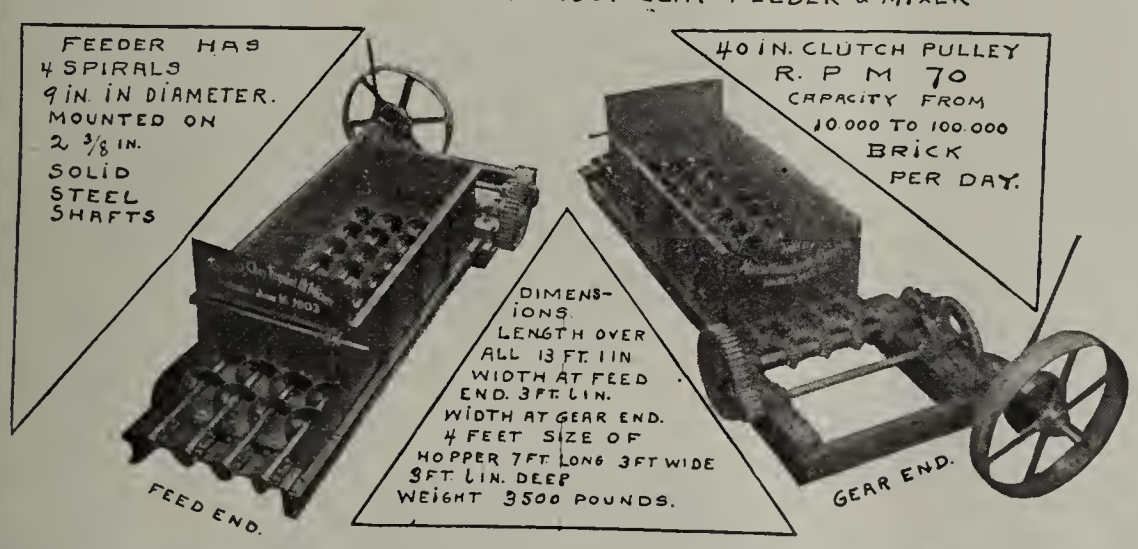
..COLOR..

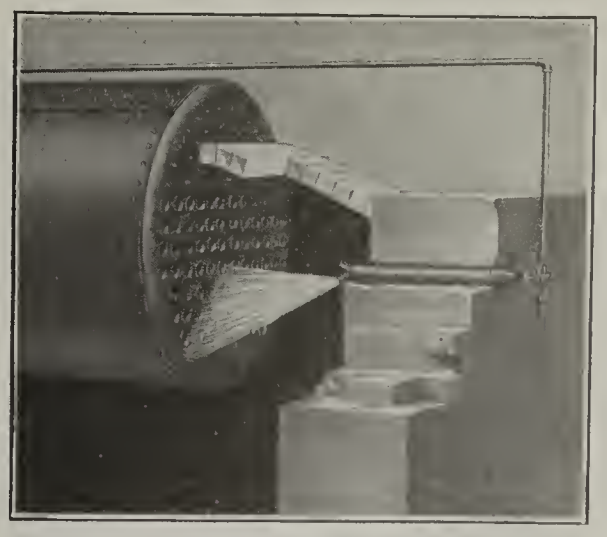
for Mortar, Brick, Cement, Stone, etc., Proves it Absolutely Permanent. Red, Brown, Buff, Purple, Black.

RICKETSON MINERAL PAINT WORKS
MILWAUKEE, WISCONSIN.

C. K. WILLIAMS & CO.
EASTON, PA.
BRICK AND MORTAR
COLORING

"FRONT AND REAR VIEW OF TYPE "B" RUST CLAY FEEDER & MIXER"





Don't Let Your Profits Run Away

We can save you from $500.00 to $1,000.00 per year, through the use of this modern Clay Feeder.

Write today for our latest catalog fully describing this new **Clay Feeder and Mixer.**

The Marion Flue Blower, (patented February 23 1909) will save 10 per cent of your fuel. It will insure you clean tubes; will prolong the life of the boiler; it will prevent the accumulation of soot; it will save the cost of steam hose; it will enable you to clean your boiler while in commision. The accompanying cut shows how the Flue Blower is installed in the rear wall of your boiler. Each blower is fitted with a nozzle which rotates, and each opening in the nozzle blows a section of the boiler tubes at a time We furnish different sizes as required, and positively guarantee to blow each flue clean

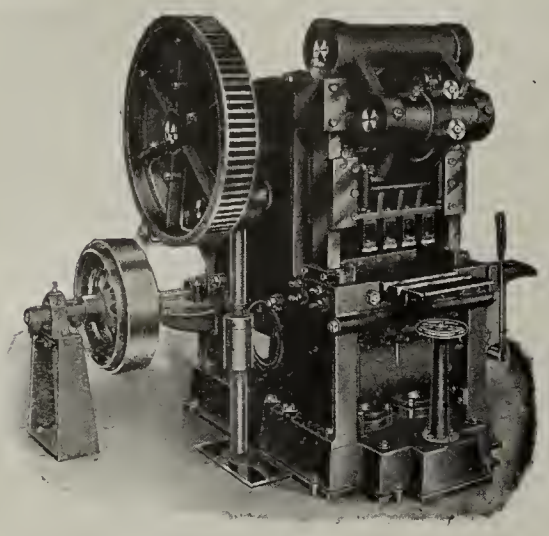
Please send for our latest catalog fully describing this useful invention.

MARION MACHINE FOUNDRY AND SUPPLY CO., - Marion, Inndiana

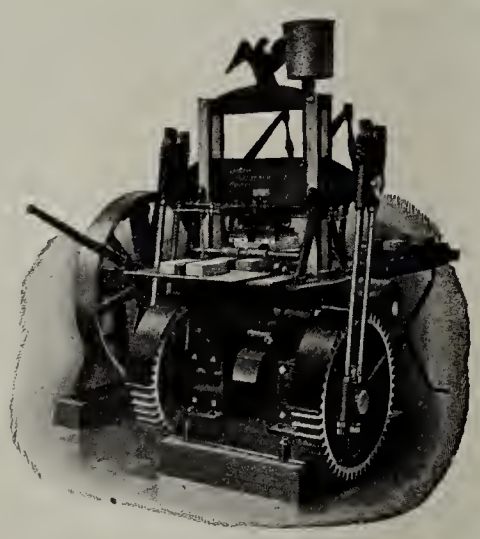
THE AMERICAN CLAY MACHINERY COMPANY

BUILT RIGHT RUN RIGHT

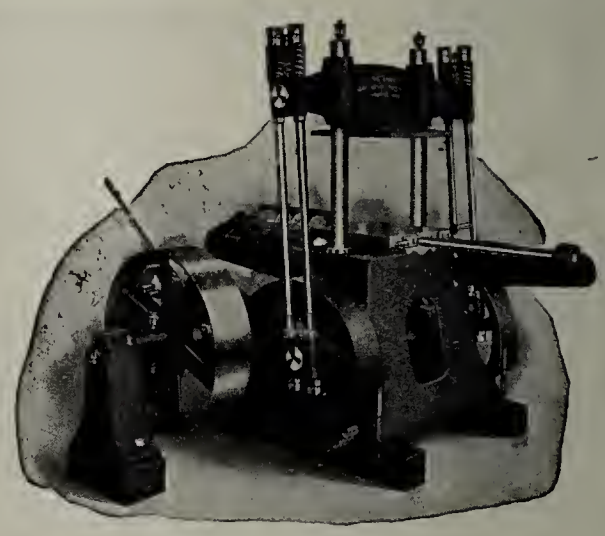
BUCYRUS OHIO, U.S.A.



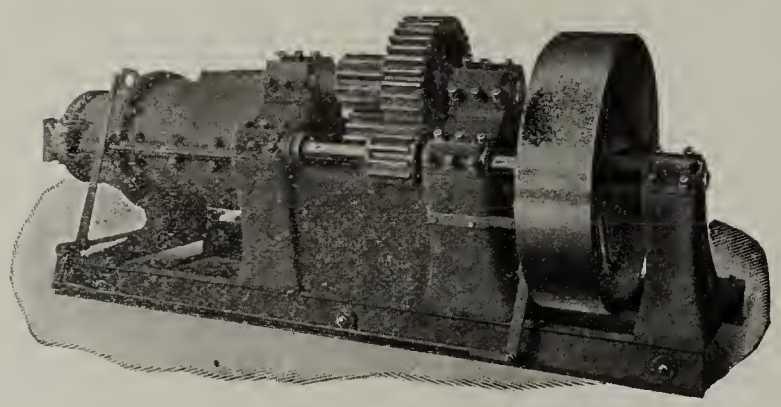
Model "B" Dry Press



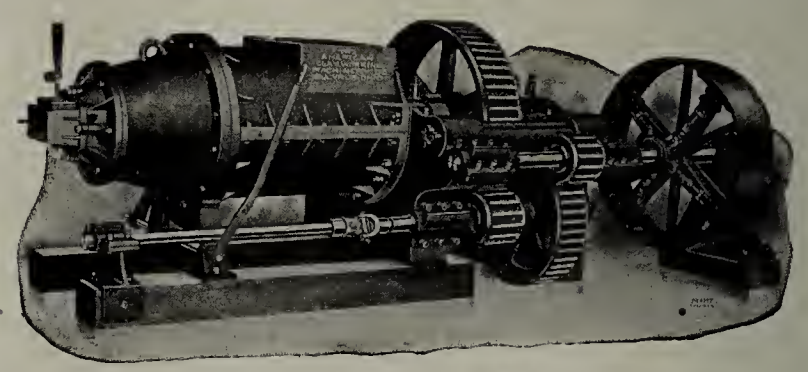
Eagle Repress



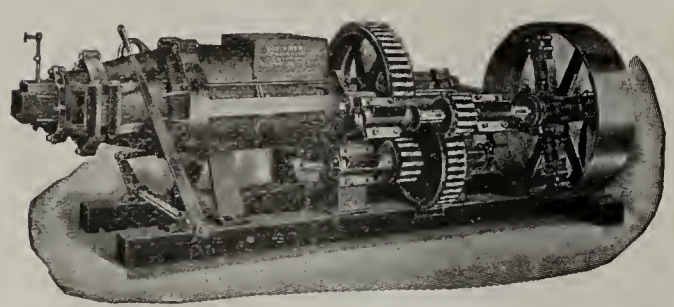
Roofing Tile Press



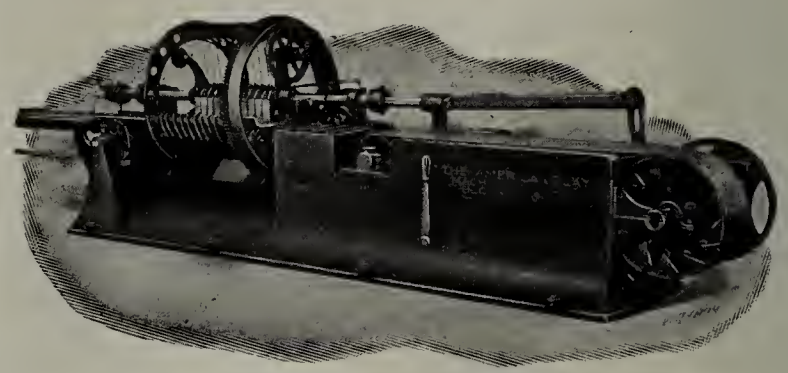
No. 65 Auger Brick Machine



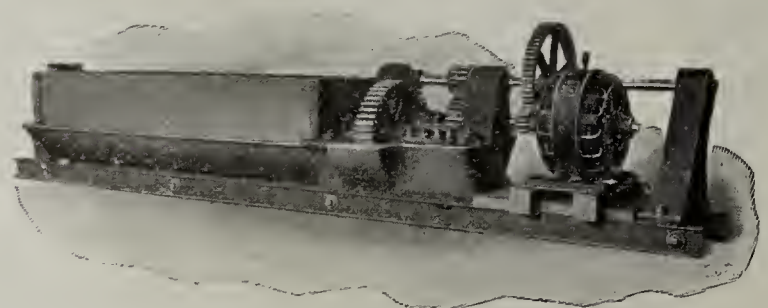
Special Giant Brick Machine



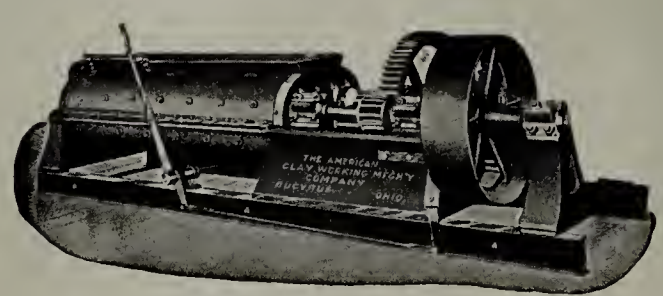
No. 2 Giant Brick Machine



No. 83 Automatic Cutter



No. 51 Electrical Driven Pug Mill

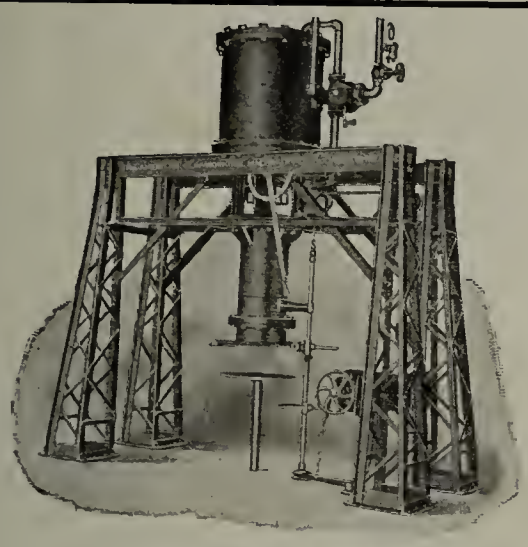


No. 38 Double Shaft Pug Mill

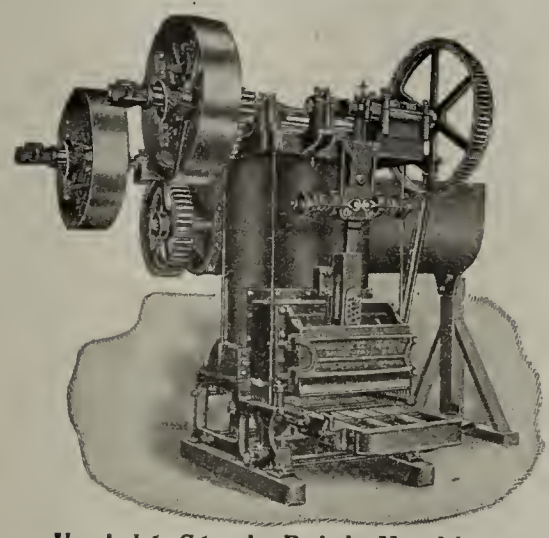
We Build Every Machine and Every Appliance Needed for the Manufacture of Every Class of Clay Products by Every Process

THE AMERICAN CLAY MACHINERY COMPANY

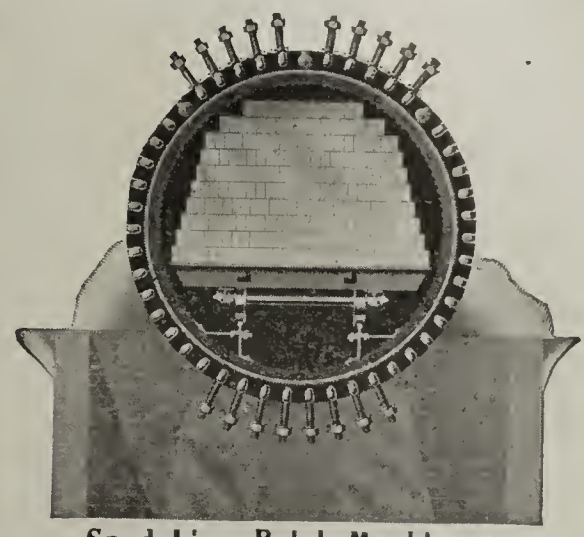
BUCYRUS — BUILT RIGHT RUN RIGHT — OHIO, U.S.A.



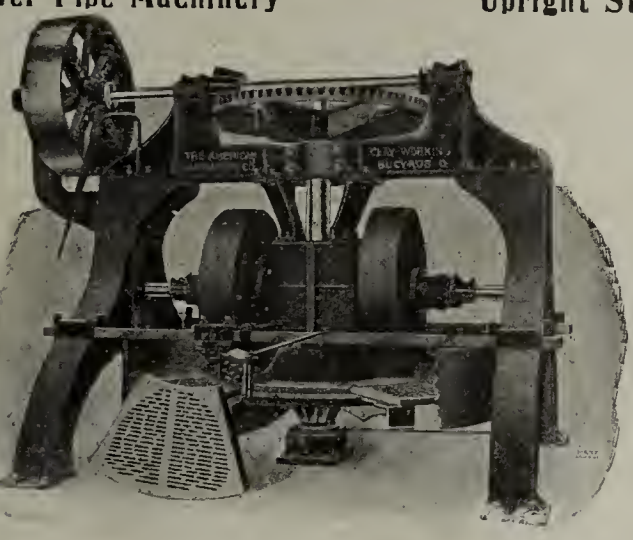
Sewer Pipe Machinery



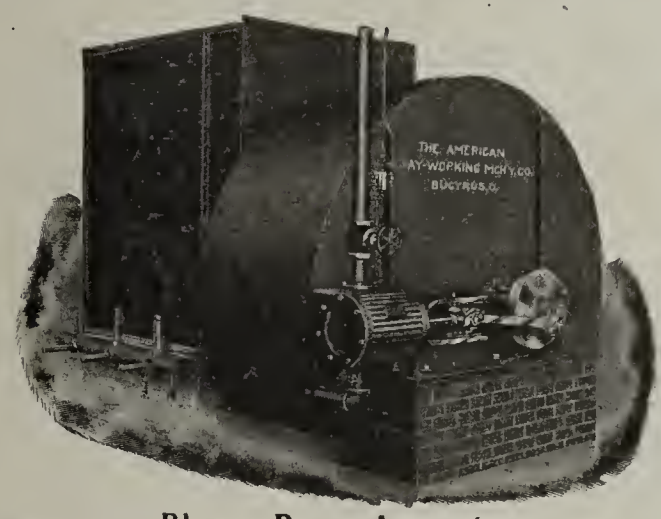
Upright Stock Brick Machine



Sand-Lime Brick Machinery

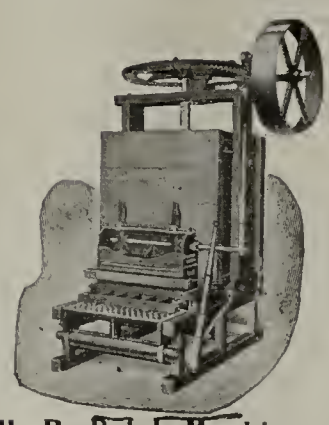


9 Foot Dry Pan

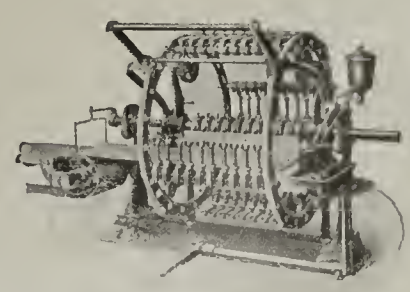


Blower Dryer Apparatus

Mold Sander



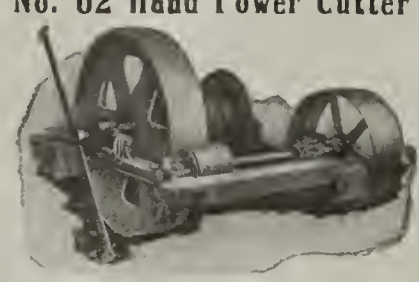
H. P. Brick Machine



No. 62 Hand Power Cutter

Dry Cars

Disintegrators



Winding Drums

We are Much the Largest and Much the Most Extensive Manufacturers of Much the Best Clay Working Machinery in the World

Fire Brick——Fire Clay

AND FIRE CLAY PRODUCTS

Manufactured out of highest grade Missouri semi-flint fire clay.
A large stock of Number One brick and shapes always on hand.
Let us quote you prices and we will save you money.
Samples sent upon request. Address

Mexico Brick & Fire Clay Co.

MEXICO, MISSOURI

Something New In Brick Kilns and Dryers

The Dennis Double Chamber Up and Down Draft Brick Kilns and Direct Heat and Hot Air Brick Dryers show many new features that make them superior to all others. Economical, durable and strong in construction and operation, having many points of dvantage that appeal to practical brickmakers. Patented April 14, 1903 and September 8, 1903. Brick plants installed and put in operation. Write for booklet. Correspondence solicited.

F. W. DENNIS,
145 Water St., Norfolk, Va.

Approved and Labeled

Fire! Fire!! Fire!!!

Extinguishers

Protect your Home, Business, Factory

Insurance Reduced. Child can Operate.
Made of Copper. Will Last a Lifetime.

Chemical charges can be procured at any drug store

Write today; don't wait; delays are dangerous.

O. J. Childs Company

Sole Manufacturers — Utica, N. Y.

AMERICAN RING-HAMMER PULVERIZER

Two Models, one for Clay, Shale, one for Rock

Will pulverize from 4 mesh to 200 mesh, 1 to 50 tons per hour, according to size of machine, fineness required, kind and condition of material.

30% to 60% less speed, and 25% to 50% less power, due to the RING and its utilization of CENTRIFUGAL FORCE.

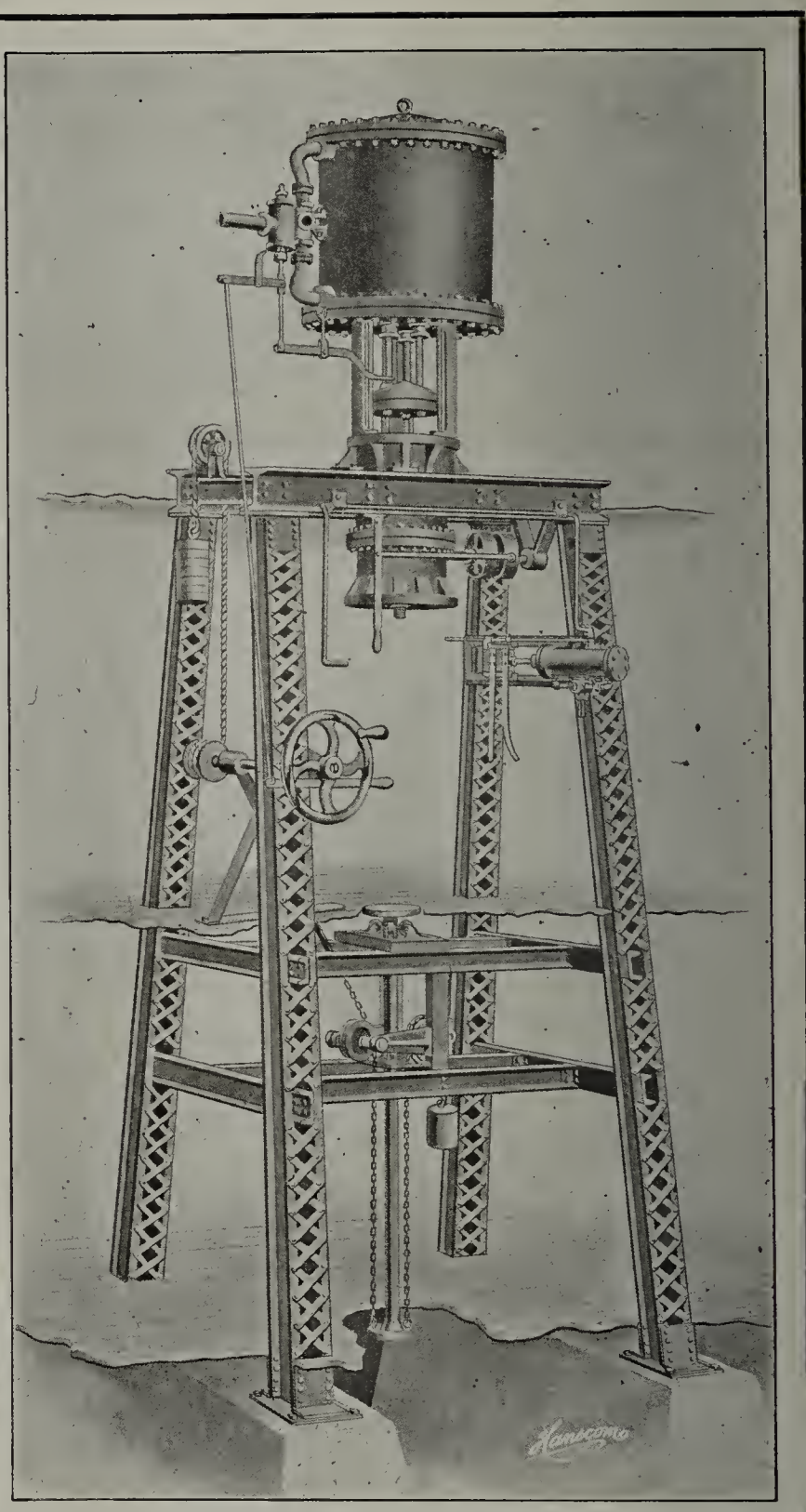
We make six sizes and every machine guaranteed to do the work which it is contracted to do when sold.

Revolving Screens Air Separators
Ask for Circulars and Information

AMERICAN PULVERIZER CO.

Suite 410 Jaccard Bldg., ST. LOUIS, MO.

DISTRICT SALES OFFICES:
F. C. Willis, 36 LaSalle St., Chicago, Ill.
I. R. Coles & Co., 39 Cortland St., New York City.
Lindrooth, Shubart & Co., Boston Bldg., Denver, Colo.



44 X 20 SEWER PIPE PRESS

SEWER-PIPE MACHINERY

COMPLETE EQUIPMENT

THE TURNER, VAUGHN & TAYLOR COMPANY

CUYAHOGA FALLS, O.

REBUILT ENGINES AND BOILERS

The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

ENGINES—Automatic—16x32 Buckeye, 15x14 Erie, 14¼x16 Buckeye, 14½x14 Ball & Wood, 13½x15 Taylor, 13x16 Erie, 12x14 Green, 12x12 N. Y. Safety, 10x10 Fisher, 9½x12 Leffel, 8x10 Allfree, etc.

ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

BOILERS—Stationary—72x18 High Pressure, 72x18 Standard, 72x16, 66x16, 60x20, 60x16, 54x16, 54x14, 54x12, 48x16, 48x14, 44x14, 40x12, 40x9, 36x16, 36x10, etc.

BOILERS—Fire Box—80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 h. p., etc.

BOILERS—Vertical—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 3 h. p., etc.

HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

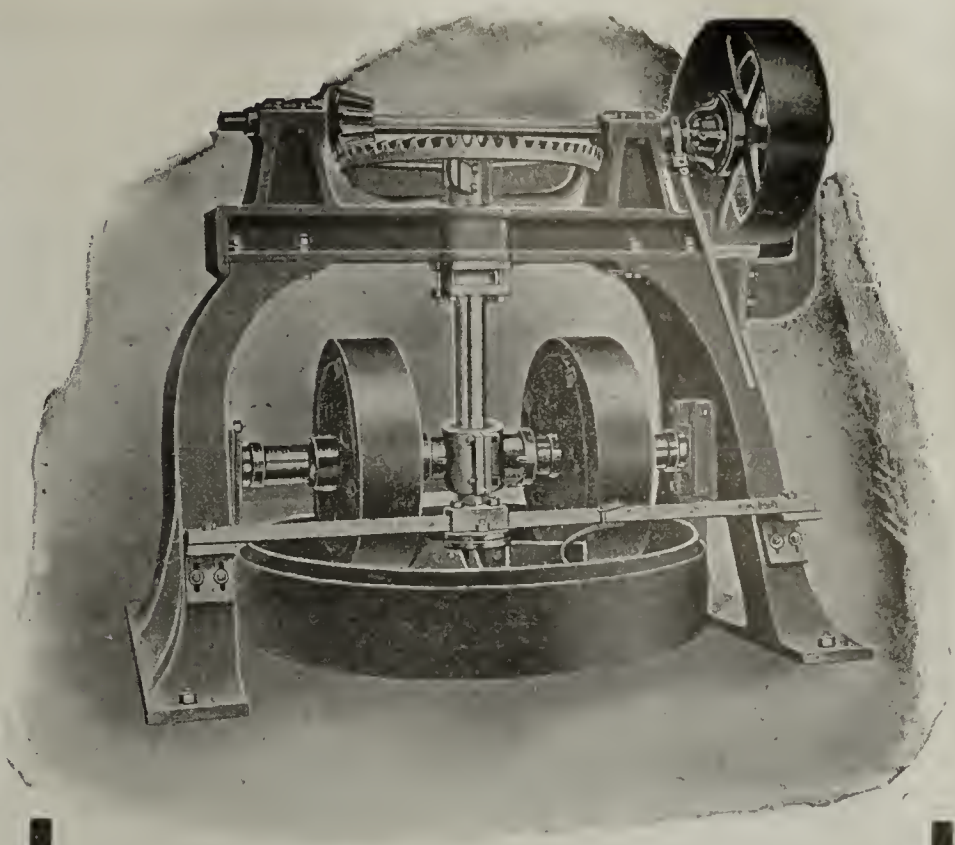
Saw Mills, Lath Mills, Edgers, Cut-Off Saws, Tanks, etc. Write for list.

Also full assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

The Randle Machinery Co.

1732 Powers Street **Cincinnati, Ohio**



PHILLIPS & McLAREN CO. PITTSBURG, PA.

BUILDERS OF

Pittsburgh Standard Dry and Wet, Revolving and Stationary Grinding Pans for Brick, Cement, Sand, Terra Cotta and all kinds of Refractory Materials.

ROCK AND ORE CRUSHERS

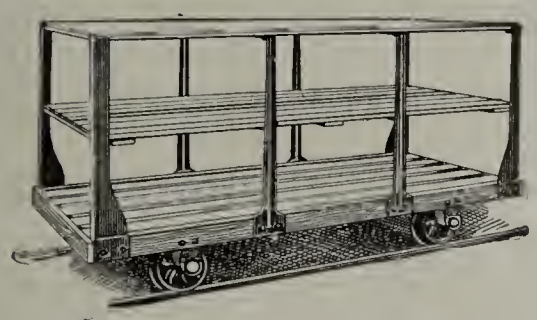
When writing for prices state kind of material and capacity required.

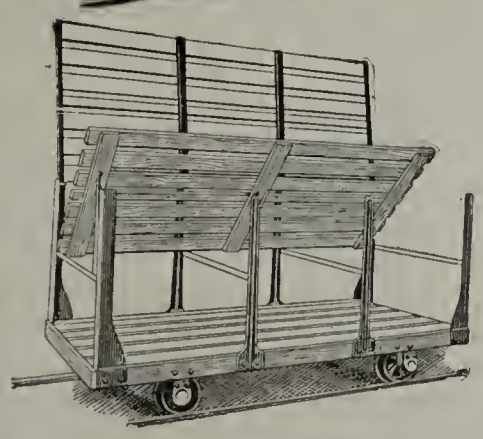
Eastern Offices

Stephen Girard Building, Philadelphia, Pa.

The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices





Vulcan Iron Works MASON CITY, IOWA

"A CHANGE IN FLUES MAKES THE DIFFERENCE IN DRYERS"

POTOMAC BRICK COMPANY

1413-G Street, N. W.

ELLIOTT S. MORSE, Gen. Mgr.

Washington, D. C., March 19, 1909.

THE KING ENGINEERING CO.,
Richmond Va.

Gentlemen:—Our No. 1 10-tunnel Sharer Radiated heat dryer before it was remodeled by you gave us an average of 55 cars per day of dry brick.

You completed the reconstruction of this dryer the latter part of January last. This day we have examined our records and find that our daily average now is 80 cars dry brick.

Yours very truly,

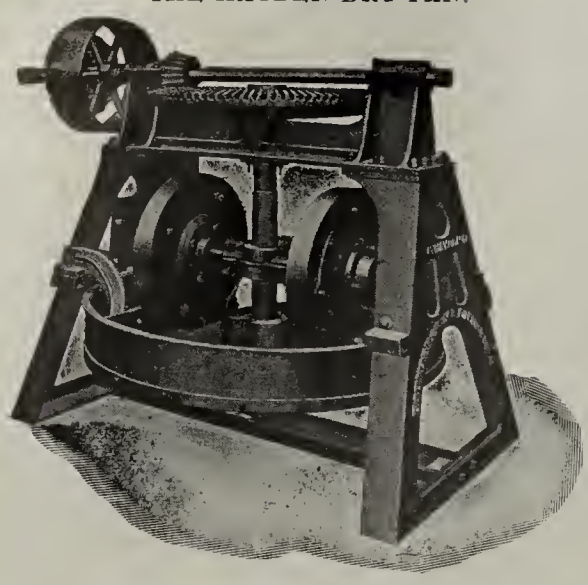
(Copy) ELLIOTT S. MORSE.

That which we have done for the above Company **we can do for You.** We can remodel **any** Radiated heat dryer **and increase its capacity** from 15 to 30 per cent.

THE KING ENGINEERING COMPANY

RICHMOND, VA.

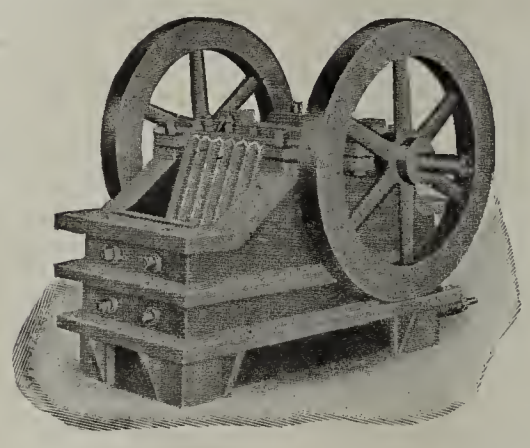
THE HAYDEN DRY PAN.



Masssive and well proportioned.
Best material.
Time tried and reliable.
Large capacity.
Acurate mechanism.
Independent or yoked mullers.

Send for specifications and prices before buying.

THE HAYDEN CLAY CRUSHER.



This Crusher is specially designed and adapted for use as an auxiliary to the dry pan.
Capacity 10 to 30 tons per hour.
Simply constructed and the strongest machine of the kind on the market.

Send for circular and prices.

THE HAYDEN
BRICK TESTING RATTLER

For testing paving brick.
Built to the standard specifications of the N. B. M. A.
Best material and workmanship.

Send for descriptive matter.

The P. HAYDEN S. H. CO., Foundry and Machine Dept.

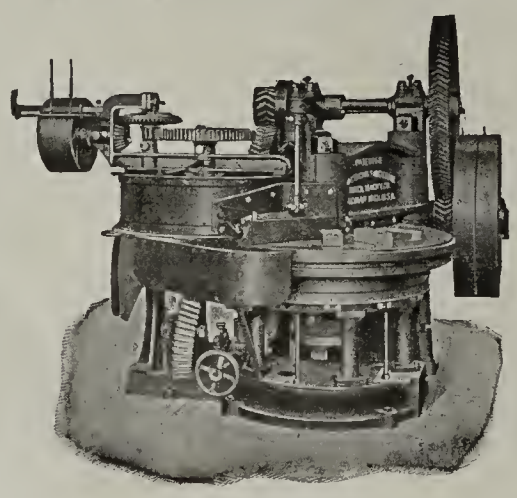
Manufacturers of

WET AND DRY PANS, CLAY CRUSHERS, STEAM CLAY PRESSES, RATTLERS, BRICK CARS, CARWHEELS, AXLES, KILN BANDS, etc.

112 West Broad Street **COLUMBUS, OHIO**

The American Sandstone Brick Machinery Co.

INCORPORATED APRIL, 1902
SAGINAW W. S., MICH.



Improved Saginaw Rotary Presses

Are now being built with extra table for making fancy brick, on which double pressure is exerted.

Don't confuse our Practical System with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant, starting and operating at our expense until at least 100,000 brick are made before asking for a settlement.

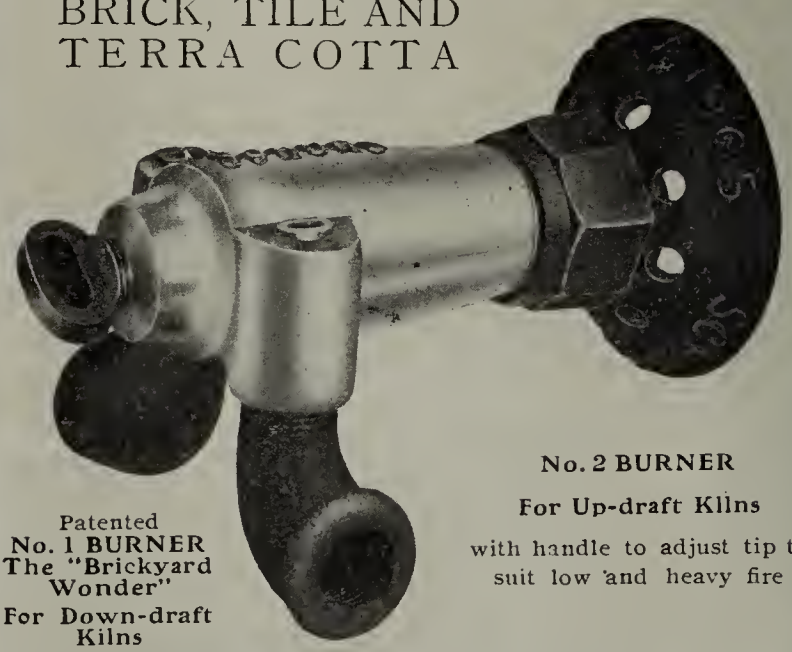
Our plants are **installed under the supervision of Practical Engineers who know how Sand-Lime Brick should be and can be made.** We have **Practical Plants Running Successfully** to show to prospective investors.

WE ARE NOT SCIENTISTS

We **Produce Results,** because we are the **Oldest Practical Sand-Lime Engineering Company Doing Business in the United States,** and **we defy contradiction.**

SCHURS Perfected Oil Burners

MOST ECONOMICAL BURNERS ON THE MARKET. DESIGNED ESPECIALLY FOR BURNING BRICK, TILE AND TERRA COTTA



ADJUSTABLE TIP

Patented
No. 1 BURNER
The "Brickyard Wonder"
For Down-draft Kilns

No. 2 BURNER
For Up-draft Kilns
with handle to adjust tip to suit low and heavy fire

Not an experiment, but a severely tested, well proved burner whose superiority to all others has been amply demonstrated.

Write for Booklet containing full information.

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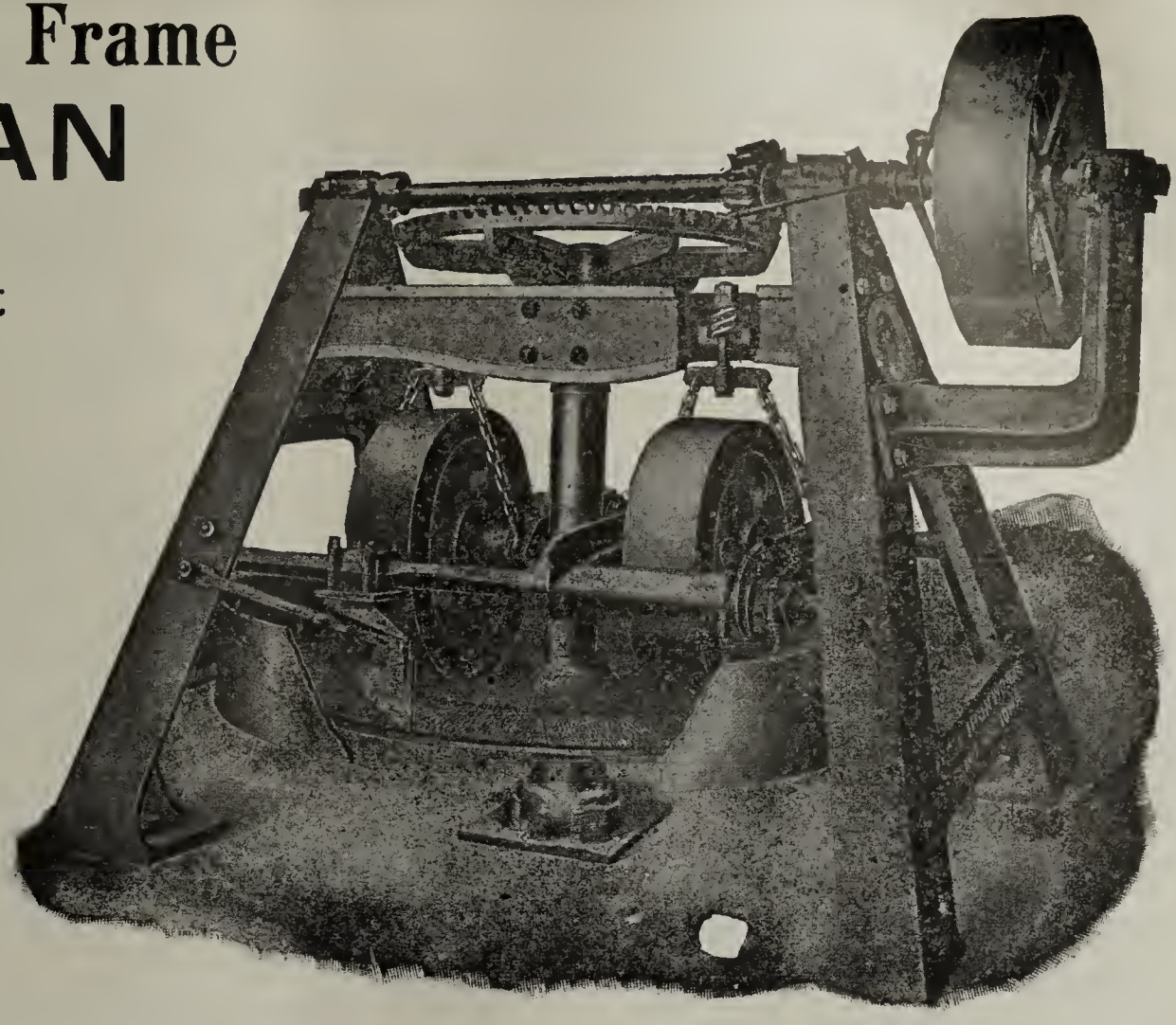
Nine Foot Iron Frame
DRY PAN

With Independent
and Suspended

MULLERS

A well-tried and
proven Success.



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Steel Brick Pallets

Built Right,

Price Right,

Write Us

STYLE No. 4.

The only Steel Bench Pallet that can be stacked without slipping. They Interlock. Light, Strong, Rigid. (Patented.)

ALL STYLES

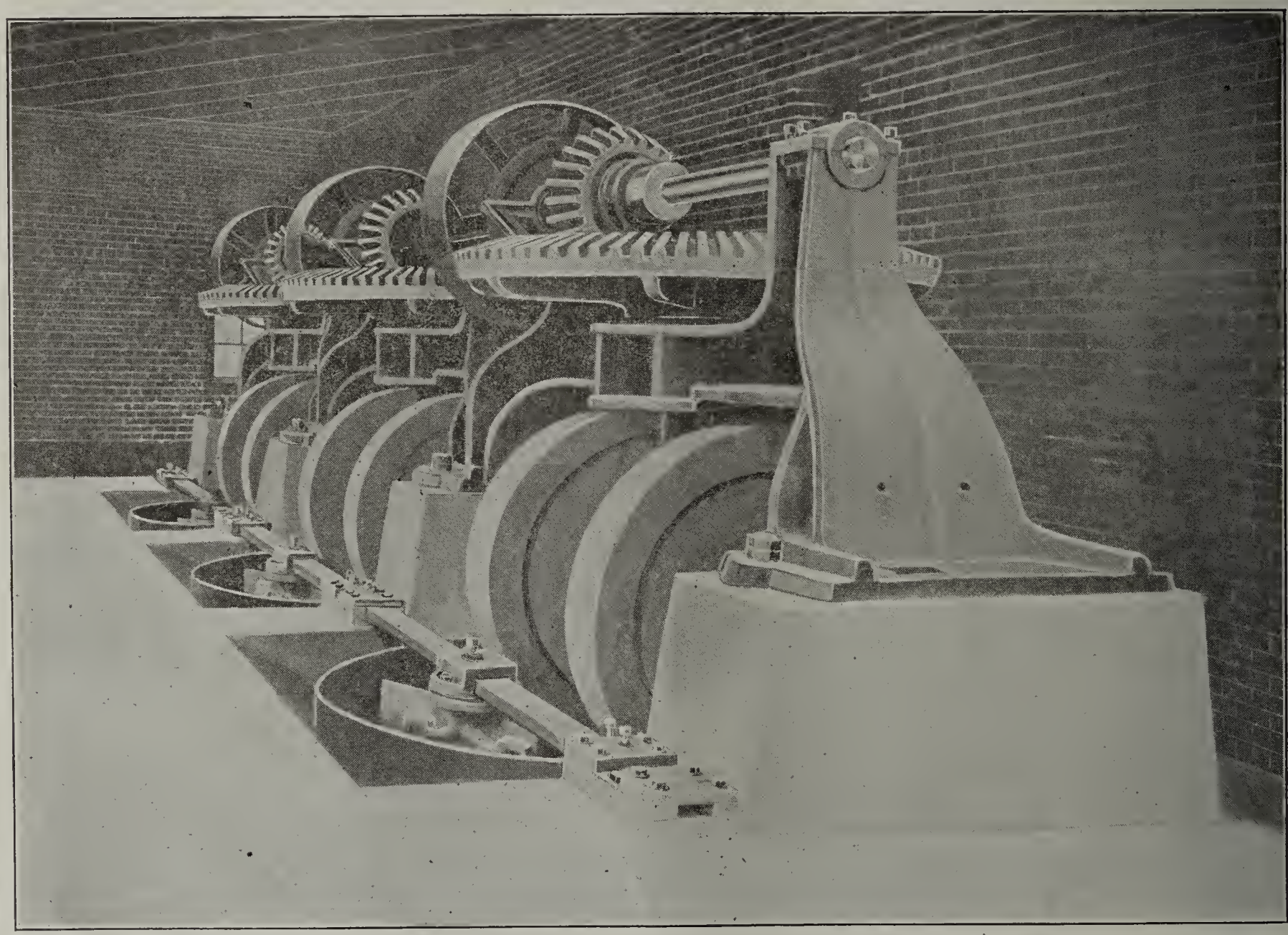
MADE EXCLUSIVELY BY

THE OHIO GALVANIZING & MANUFACTURING CO.

NILES, OHIO

Our Dry and Wet Pans are worth your investigation

We build them eight, nine and ten feet in diameter, weighing 30 to 50,000 pounds. They have great crushing and screening capacities



We also manufacture complete equipment for Sewer Pipe, Brick, Terra Cotta Drain Tile and Fire-Proofing Works

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The Means Foundry & Machine Co.

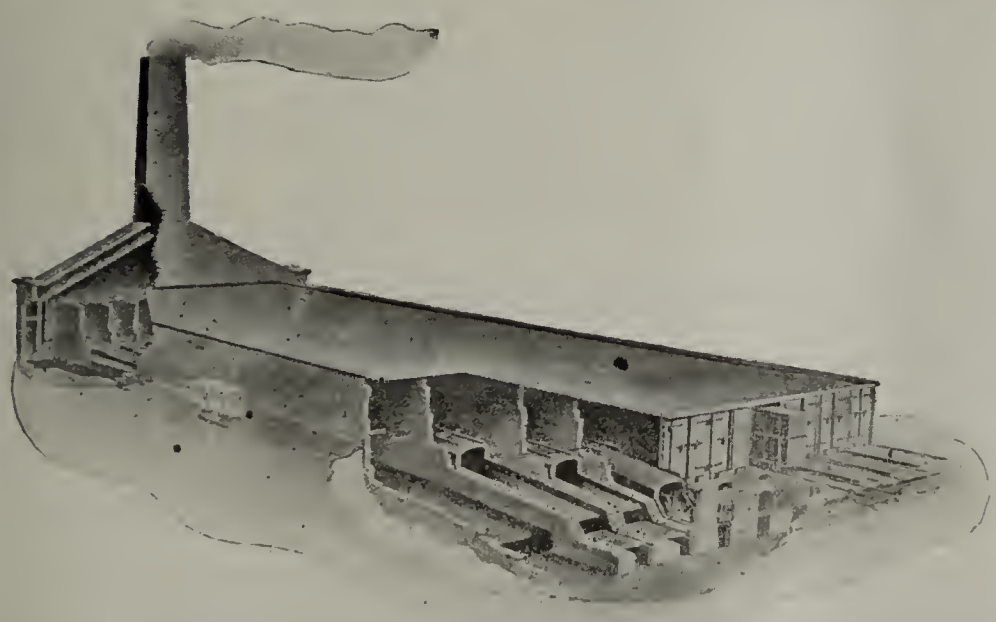
Eastern Agents
WILSON KILN & DRYER CO.
West End Trust Bldg.
Philadelphia, Pa.

Steubenville, Ohio

Wilson Kilns and Dryers

Built by Wilson Kiln & Dryer Co., Capacity 100,000 Brick Per Day.

Patented July 8, 1902



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Why are we always busy?

Because we study the brick business and build kilns and dryers to suit the conditions.

Our smoke-consuming furnaces, and continuous waste heat system, kiln floors, and test kilns have been in every day use for several years and have proven very satisfactory.

Our Brick Kilns are modern in every way, and have proven successful wherever built.

Our Radiation Heat Dryer has more radiating surface than any other dryer in use.

The Kilns and Dryers are very economical in construction and operation. We believe we have the most satisfactory Kiln and Dryer system to produce results on the market.

Wilson Kiln & Dryer Co.
West End Trust Building
Philadelphia, Pa.

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Manager of the Excelsior Granite Brick Co. -:- Specialist for the Sand-Lime Brick Industry

Inventor of a New Process for Making "GRANITE BRICK"

My system enables the manufacturer to turn out a sand-lime brick of a compression strength of 9,000 pounds per square inch from proper raw materials. Send in a one-pound fair average sample of your sand and a one-pound sample of your lime for examination.

Porcelain Enamel for Clay Brick

Forward, express charges prepaid, ten brick for testing purposes.

Special Enamel for Sand-Lime Brick

Send in as many brick as colors wanted and specify colors desired.

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HANDLE YOUR CLAY WITH ONE MAN AND

The Thew Steam Shovels

Made in Four Sizes. Mounted on Car Wheels or Traction Wheels.

Type No. 1 Shovel—Geo H. Clippert & Bro., Detroit, Mich.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adjusted to cut to any desired level.

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Wire Cables used instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickyards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

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THE THEW AUTOMATIC SHOVEL CO.

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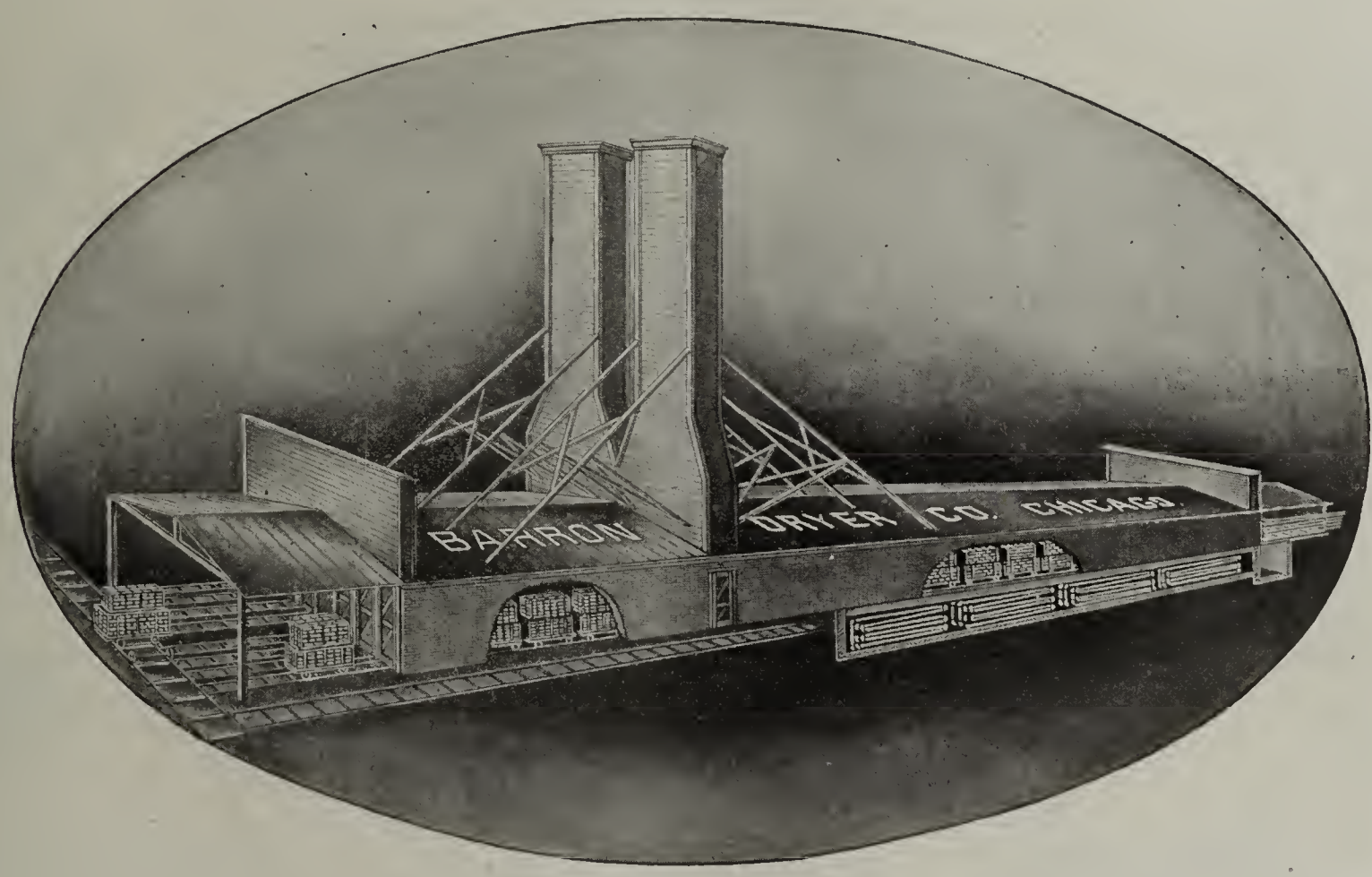
Established 1879

MANUFACTURERS, PATENTEES and BUILDERS of the

CHICAGO IRON CLAD DRYERS
BARRON'S TENDER CLAY DRYERS



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CASTINGS, FORGINGS, PIPE, VALVES, FITTINGS
RAILS, SPLICES, SPIKE, STRUCTURAL MATERIAL

OFFICE AND SHOPS **18 SLOAN STREET** ON C. & N. W. RY. **CHICAGO**

THE "MARTIN" CLAY-WORKING MACHINERY

IS KNOWN THE WORLD OVER FOR

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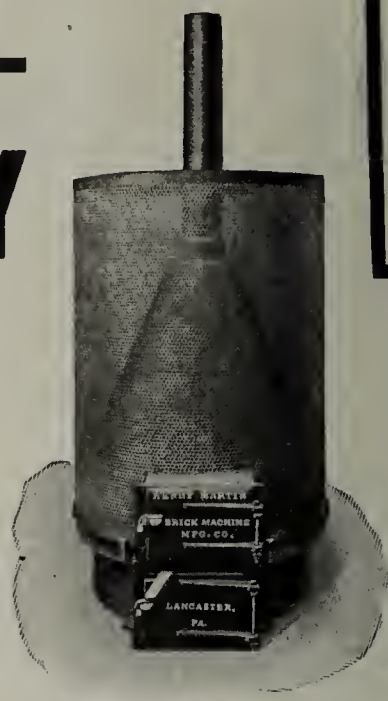

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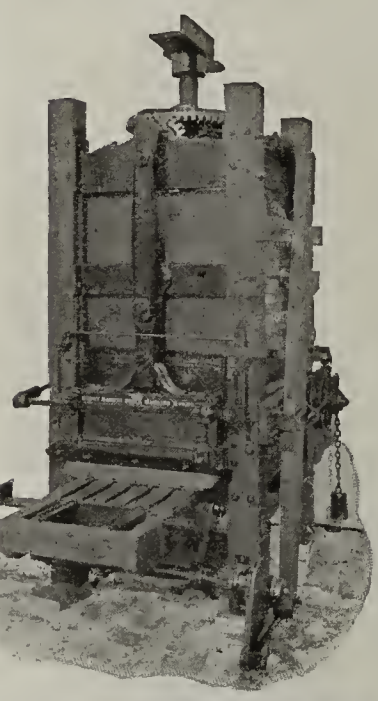
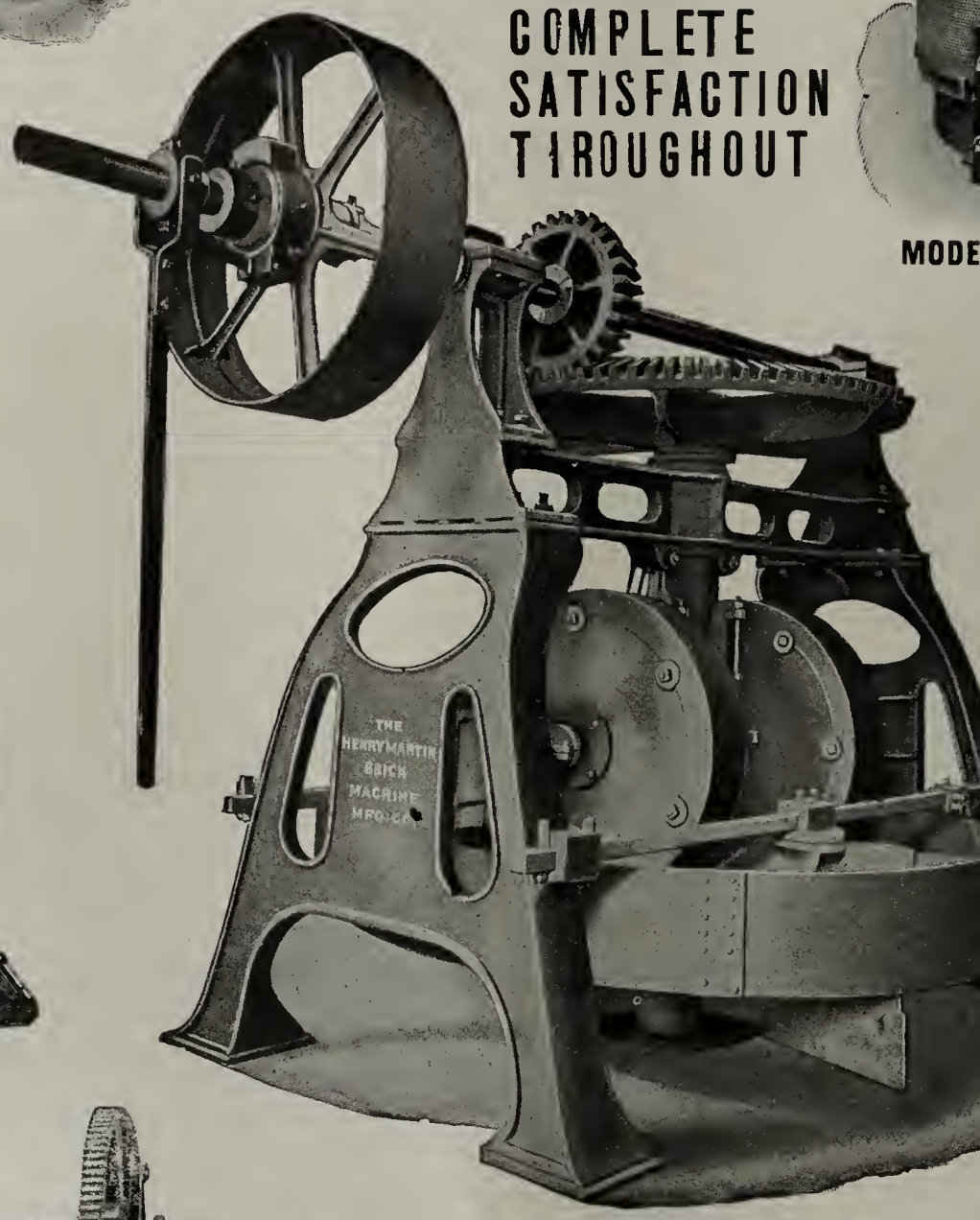
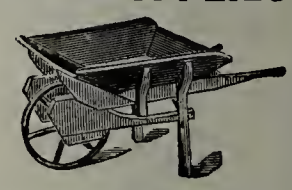
WE GUARANTEE OUR MACHINERY



HORSE POWER MACHINE



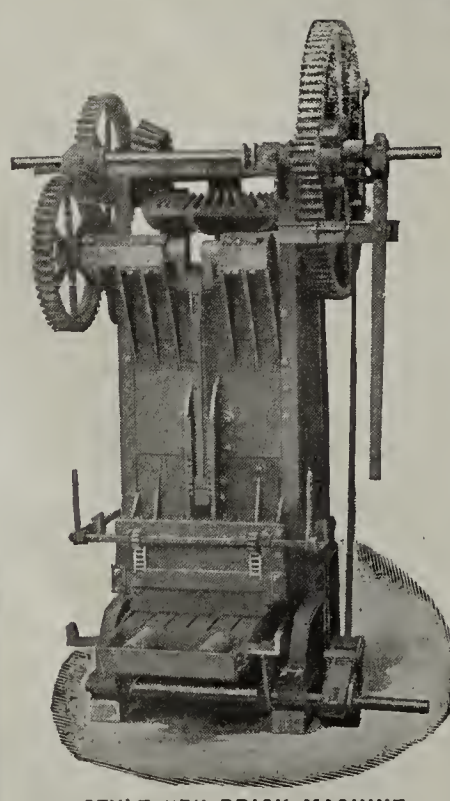
YARD SUPPLIES



OF ALL KINDS BUILT RIGHT

TRUCKS

BRICK MOULDS THAT ARE BUILT FOR HARD USAGE IS THE "MARTIN." TRY A SET



STYLE "P" BRICK MACHINE

WE BUILD DRY OR WET PANS 5-7 OR 9-FT. WRITE US.

"WE FURNISH EVERYTHING THE BRICK-MAKER NEEDS"

STYLE "P" CRUSHER

MARTIN

CLAY-WORKING EHGINEERS & MACHINERY EXPERTS

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THE "MARTIN" STEAM BRICK "DRYING SYSTEM"

PATENTED February, 22d, 1898, No. 599509
October 10, 1905. No. 95520
November 14, 1905, No. 804489
May 26, 1908. No. 888831

This Dryer, and the design in arranging it, are under the protection of the United States Government by virtue of patents granted. Patents have also been taken out in all the principal foreign countries. We are the sole owners and control these important patents and have authorized NO ONE to manufacture or sell the "MARTIN"

RACK PIPE STEAM BRICK DRYERS

☞ YOUR BRICK DRY OVER NIGHT ☜

☞ LABOR SAVING THROUGHOUT ☜

From "Martin Patent System" Brick Dryer to Kilns

ADAPTED FOR SOFT-MUD OR STIFF-MUD BRICK

SUPERIOR IN EVERY RESPECT TO ANY OTHER SYSTEM—Labor Saving Throughout. Dispenses with Truckers and car Pushers. Pallets Automatically Return to Brick Machine. Quick to install and low in price, and takes up very little Yard room.

The sale and construction of the "Martin" Rack Pipe Steam Brick Dryer is under the direct supervision of the Factory Office at Lancaster, Pa.

FOR FURTHER INFORMATION, ADDRESS

THE HENRY MARTIN BRICK MACHINE MFG. CO., Inc.

LANCASTER, PA., U. S. A.

Silicate Brick Made by the "Division Method" Patented

THE PHILADELPHIA OPERA HOUSE

Built by Oscar Hammerstein and called the finest Opera House in the World. This beautiful building is faced with over 500,000 of our WHIE SILICATE BRICK, made under our patented process. These bricks were also used to line the wall at back of stage and also for the stairways.

The building seats 4,100 people and measures 240 feet on Broad Street and 160 feet on Poplar Street.

How would you like to make Brick suitable for Facing Buildings like this and do it cheaper than common brick can be made in any other way out of sand and lime?

We challenge any one to make as good a brick as we do by our process, and will allow him twice our cost.

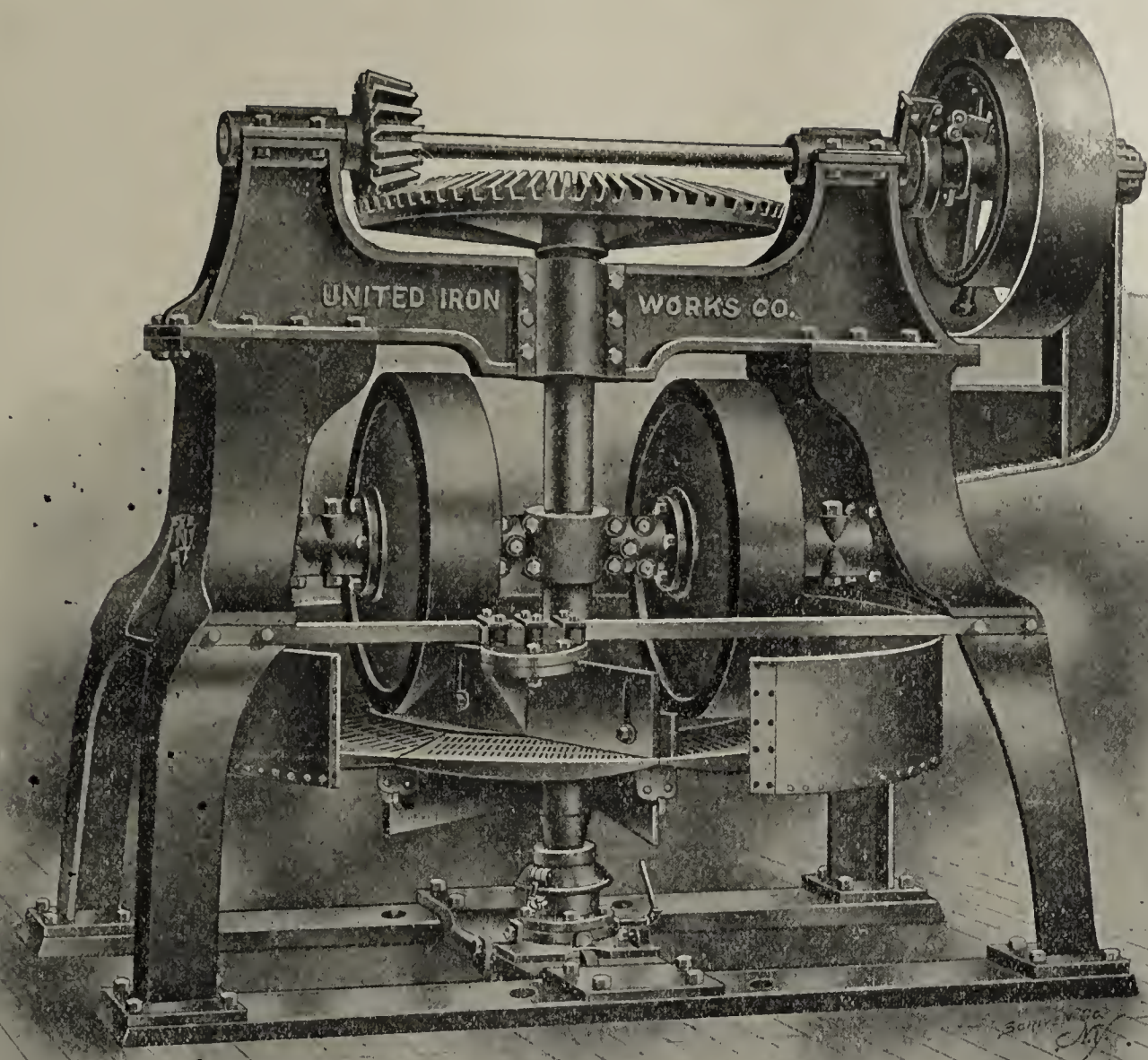
The factory we built last year at Washington, D. C., is pronounced the most compact and cleanest known, and the product the finest brick produced.

WE CAN DO AS WELL FOR YOU. ASK US ABOUT IT AND LET US SHOW YOU

International Sand-Lime Brick & Machinery Company

Engineers and Contractors for Silicate Brick Factories

90 WEST STREET, NEW YORK, N. Y.



Here's What One of the Largest Cement Companies in the United States Says About our "Pittsburg" Dry Pan:

"Answering yours of the 19th instant; We are pleased to state that the dry pan which we purchased of you about a year ago has given entire satisfaction. We consider it one of the best, if not the best, dry pan manufactured and shall, indeed, be pleased to recommend it to prospective purchasers of such machinery.

Yours truly,

WESTERN STATES PORTLAND CEMENT CO."

And they Backed up their statement by ordering recently THREE MORE Pans from us

UNITED IRON WORKS COMPANY

General Offices: SPRINGFIELD, MO.

SPRINGFIELD, MO.; AURORA, MO.; IOLA, KAS.; PITTSBURG, KAS.
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No. 217-E
Electric Side Dump Car.

No. 146
Ball Bearing Turntable. Made in sizes from 4 ft. to 11 ft. in diameter.

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Gable Bottom Dump Car, with trip and brake.

CARS FOR BRICK YARDS, CEMENT WORKS, CONCRETE BLOCK MANUFACTURERS, STONE QUARRIES, ETC.

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TURNTABLES, TRANSFER CARS, DRYER CARS, TRACK, SWITCHES, BRICK PALLETS.

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Heavy Double Deck Car
Patent Malleable Iron Uprights.

NO. 142
Transfer Car.

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NO. 277
Steel Mine and Quarry Car.

The Atlas Car and Mfg. Co.

CLEVELAND, OHIO

VOL. 35 No. 3

CLAY RECORD

August 14, 1909

A JOURNAL DEVOTED TO THE DISSEMINATION OF ALL MATTERS PERTAINING TO THE CLAY INDUSTRY

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Imperative demands from all sections of the country for a cutting table to accurately cut stiff mud face brick has brought out the Champion, the next upward step in the evolution of Rotary Cutters. It is semi-automatic and all of the desired qualities are there, we find nothing to improve about it. It has won its way by sheer merit. It has the good will of every face brick maker who uses it, and many more who have but seen it. It is chock full of perfection. We haven't room to tell you all about it here, but write now.

THE C. W. RAYMOND COMPANY,

DAYTON, OHIO, U. S. A.

The Andrus Brick Press Makes Brick Every Day

Been doing it 20 years.

Strong Simple and Capable.

24 in operation in St. Louis District.

INVESTIGATE

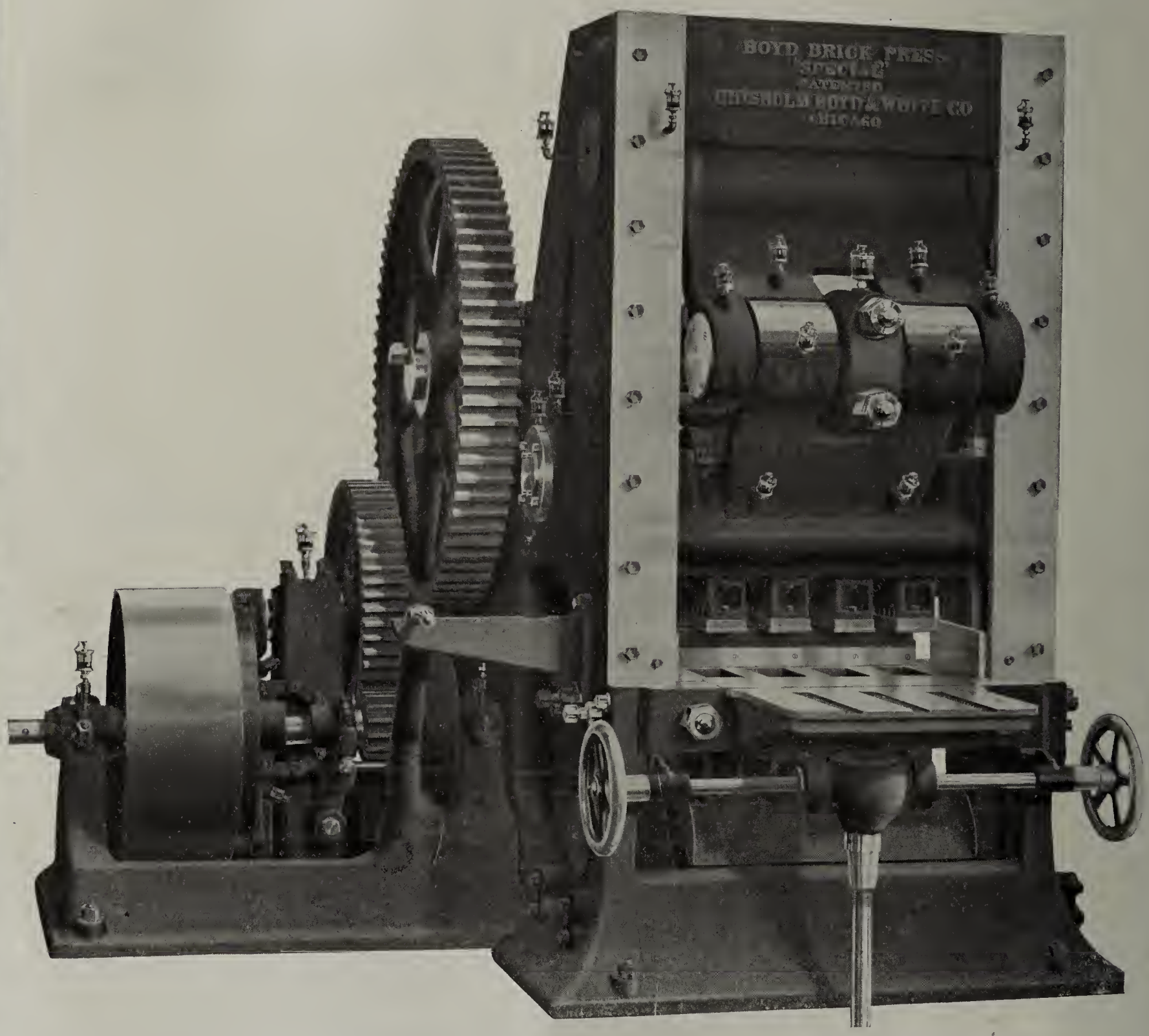
Scott Manufacturing Co.

1815 THIRD NATIONAL BANK BUILDING

ST. LOUIS ~ ~ MISSOURI

THE BOYD BRICK PRESS

Built in Two, Four and Six-Mold Sizes



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BRICK PLANTS designed and complete machinery equipment furnished. More Boyd Presses in use than all other Press Brick Machines combined. The Boyd Press has great strength and endurance, great pressure and long dwell. Boyd Presses built 20 years ago are still in use and doing good work. Brick Presses that last are the cheapest in the end.

Chisholm, Boyd & White Company

Office and Works: 57th and Wallace Streets, CHICAGO, ILL.

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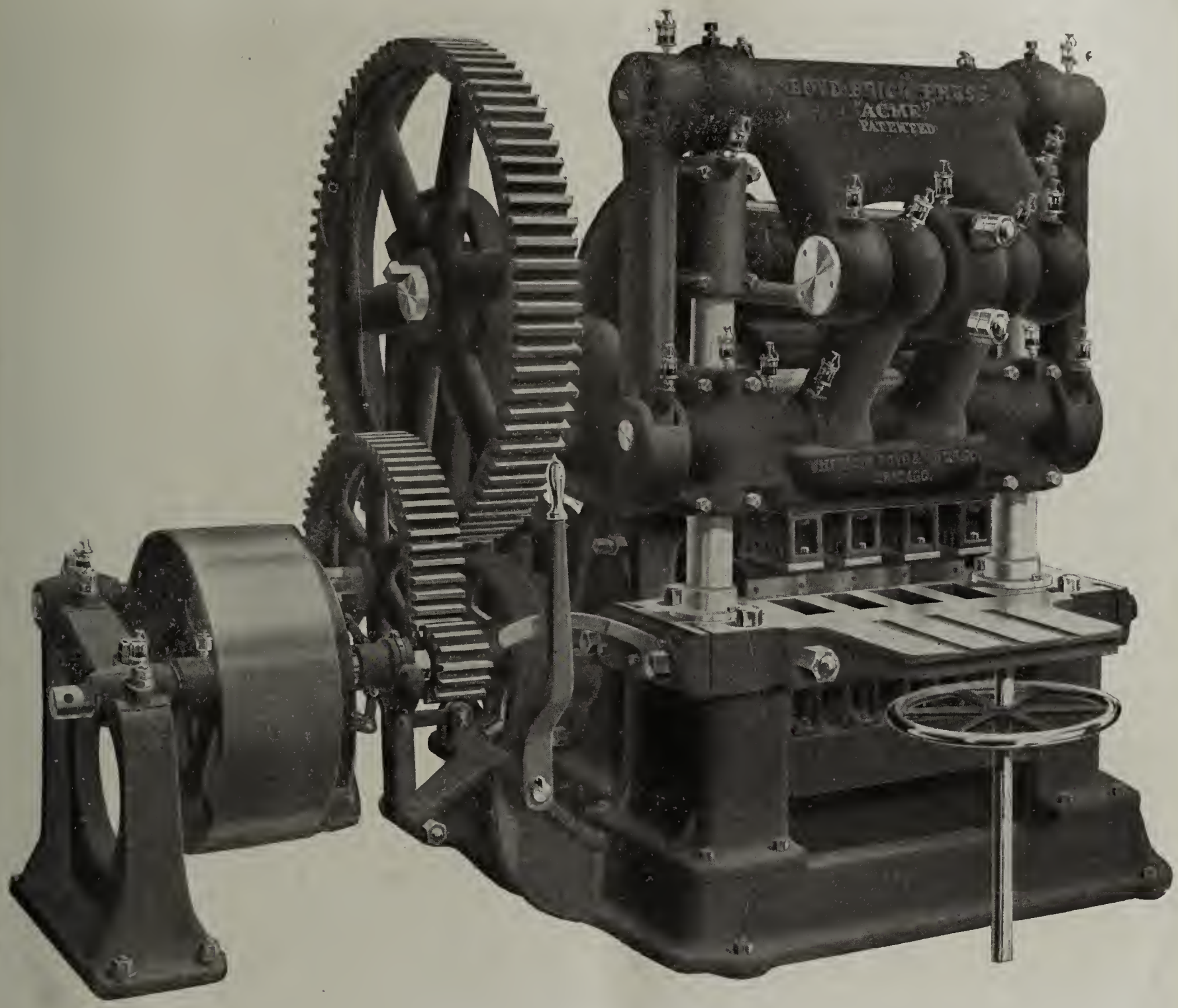
Built in Two and Four-Mold Sizes



FOUR-MOLD "ACME"

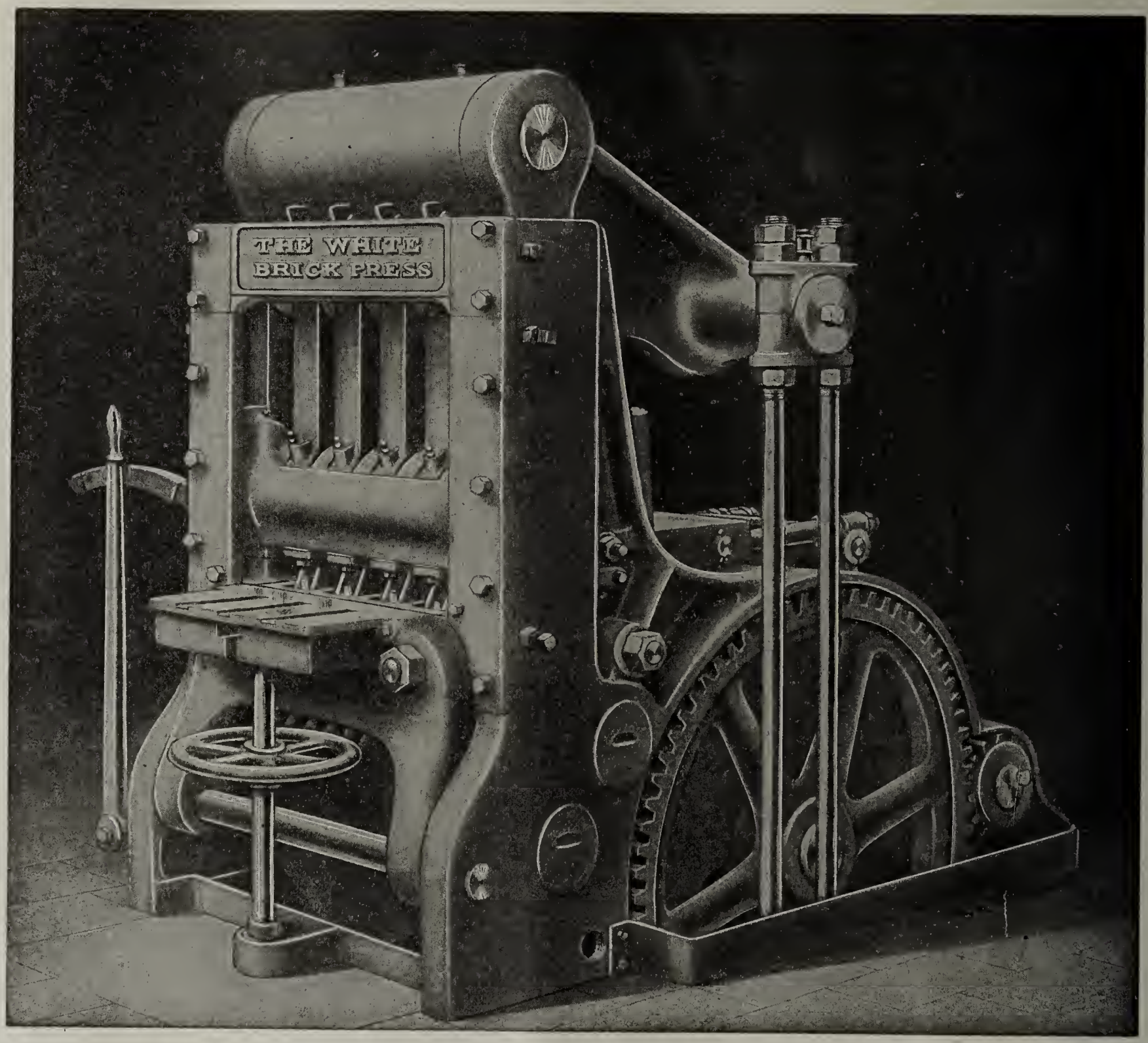
Detailed perfection, strength, endurance and quality of product have made the Boyd, the Brick Press by which all others are judged.

Write for catalogue No. 20 containing suggestions concerning the equipment of brick plants with complete plans.

CHISHOLM, BOYD & WHITE CO.

Office and Works: 57th and WALLACE STREETS **CHICAGO, ILLINOIS**

ALWAYS ON THE JOB
THE WHITE BRICK PRESS



When You Learn of a Breakdown on the Yard, You may be sure it is NOT the PRESS, if it is a WHITE

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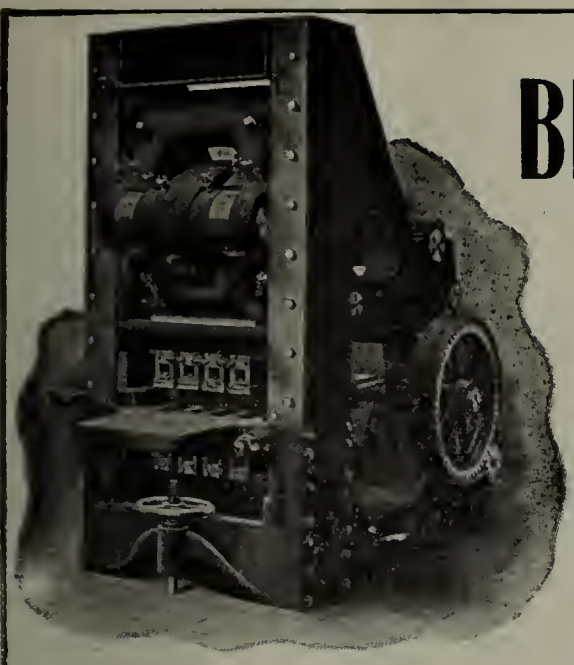
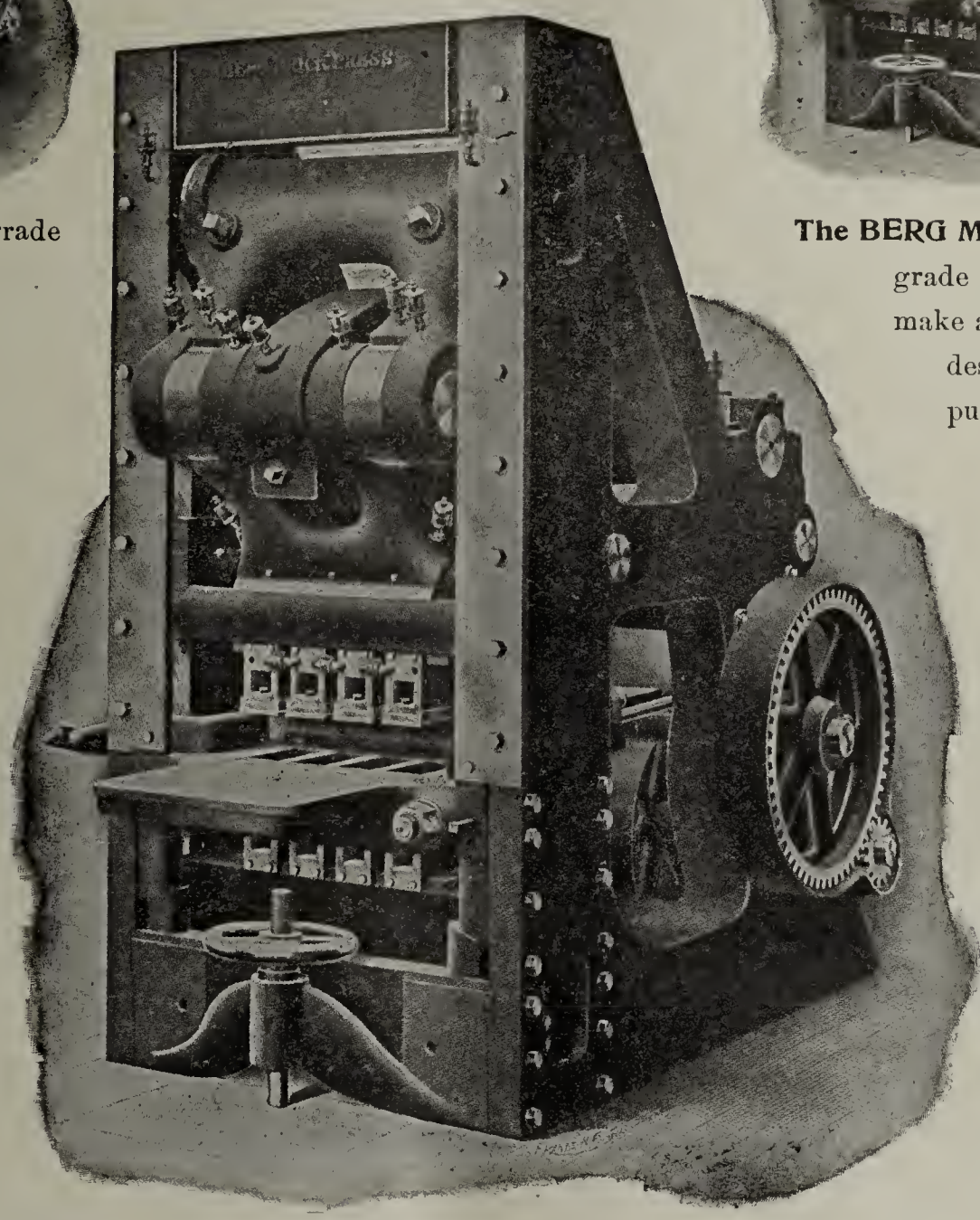
CHICAGO BRICK MACHINERY CO.

1308 GREAT NORTHERN BUILDING, CHICAGO

BERG BRICK PRESS

The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.





The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.

The BERG MAKES the highest grade of fire brick. Can make all kinds of shapes desired for fire-brick purposes.

First-Class Workmanship. Cut Gearing. Fully Warranted.

Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

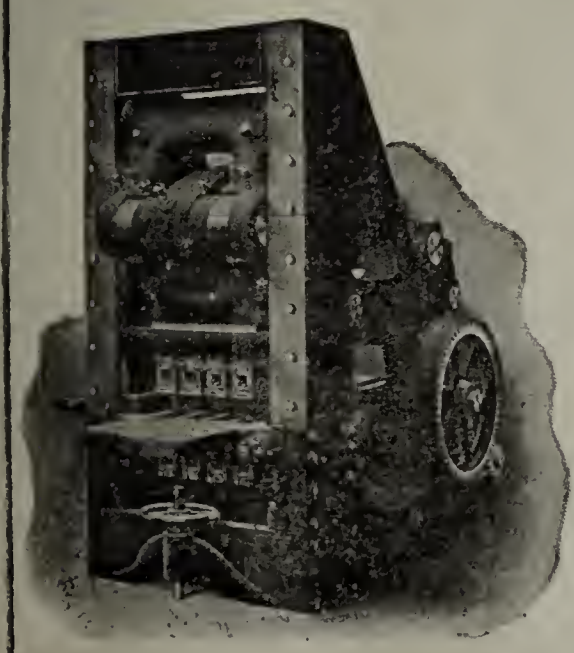
The BERG makes the best sand-lime brick and cheapest because it is the strongest machine and gives the highest pressure. Thirty-five sand-lime plants in United States use the **BERG** Brick Press SUCCESSFULLY.

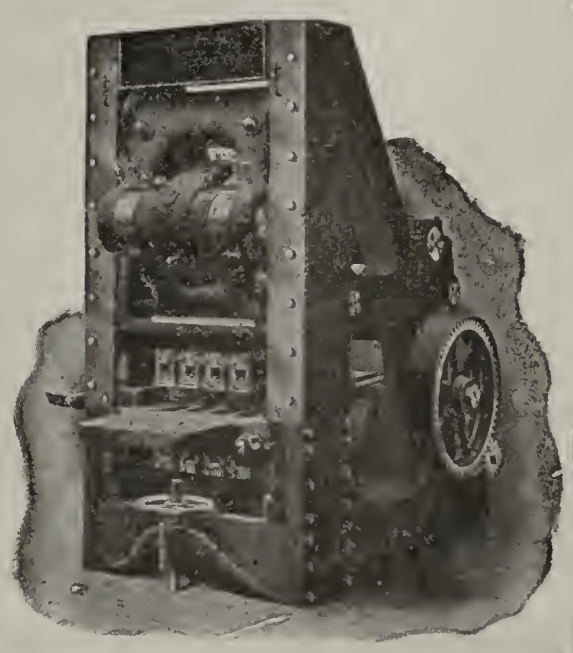
The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.

The 1905 Berg Press

Many other steps further forward in improvement and highest grade of material and workmanship, also cut gearing. Fully guaranteed as to its success. Manufactured by its inventor in Toronto, Canada, exclusively. Plans and specifications on the different kinds of plants furnished, also all equipments.

For prices and full particulars, address





A. BERG & SONS

OFFICE: MANNING CHAMBERS

TORONTO, ONT., CANADA

The Fernholtz Brick Machinery Co.

MANUFACTURERS OF

DRY PRESSES, PULVERIZERS, MIXERS, ETC.

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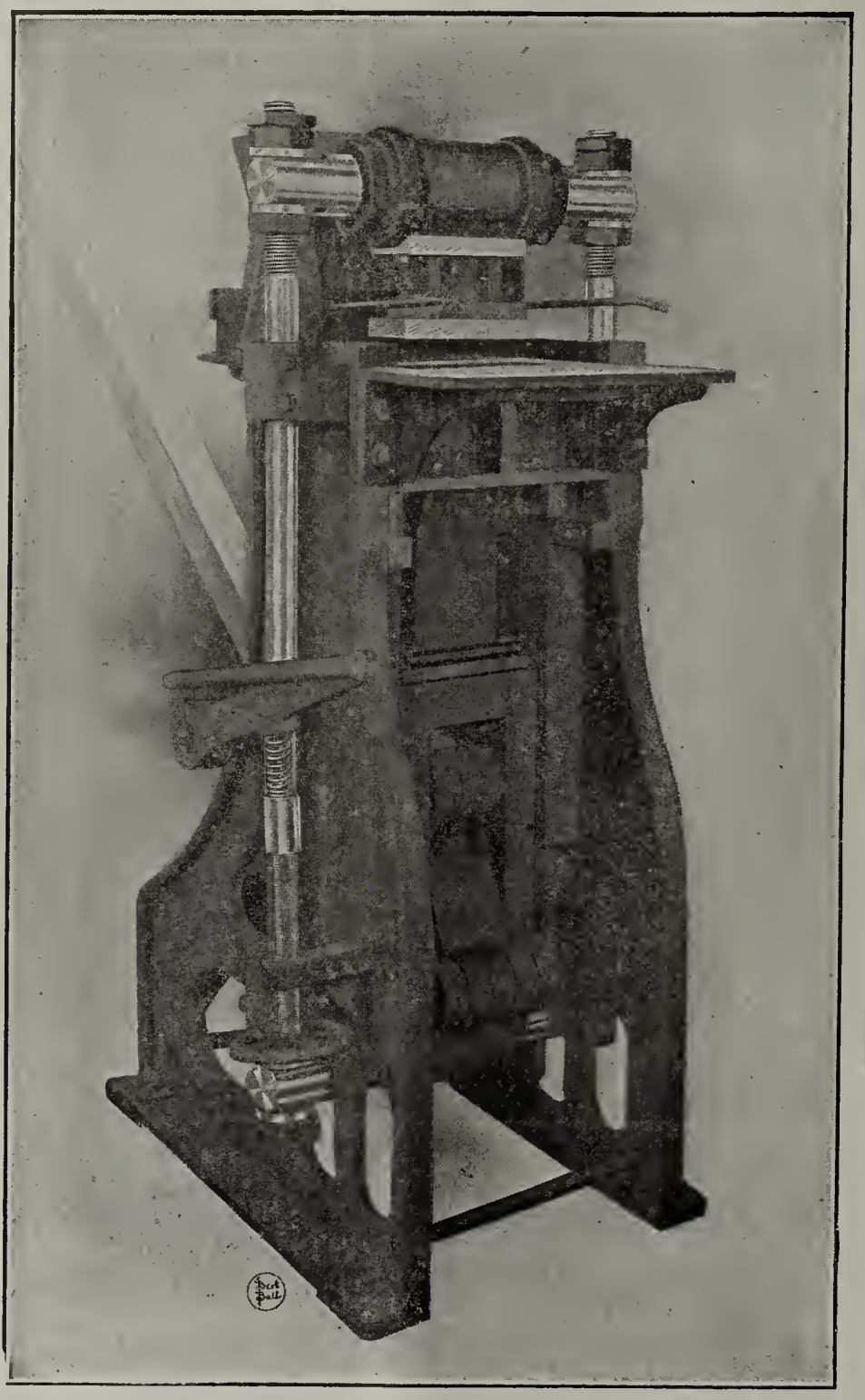
CLAY
AND
SHALE
BRICKS



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CEMENT
AND
SAND-
LIME
BRICKS

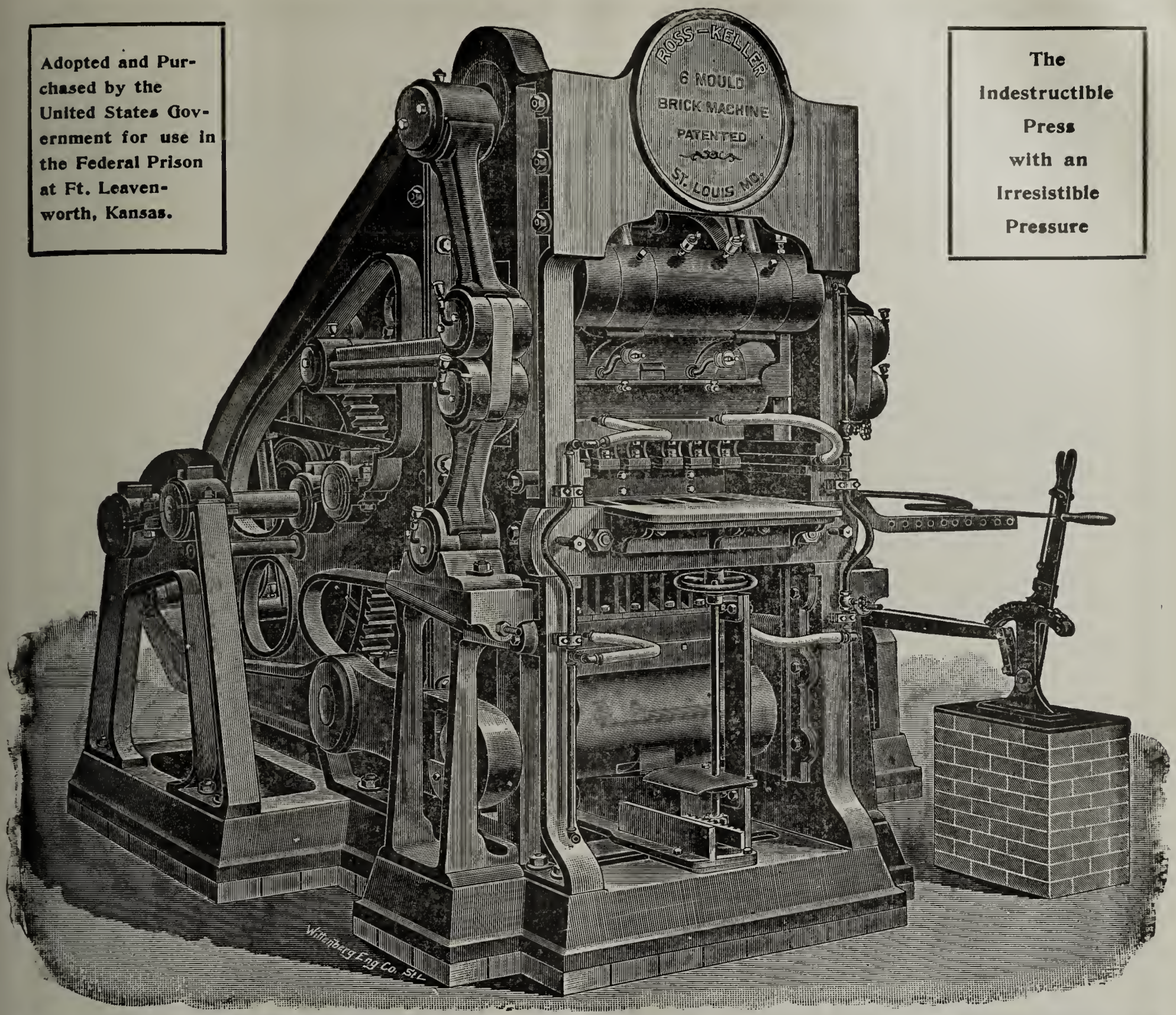
This Hand Press makes Brick equal in density to those made on a power press. Every Brick *PERFECT*. Extensively used for ornamental and special design.

The Fernholtz Brick Machinery Co.

BOYLE AND OLD MANCHESTER, ST. LOUIS, MO.

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.

The Indestructible Press with an Irresistible Pressure



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Sand-Lime Brick Plants, Shale and Clay Brick Plants

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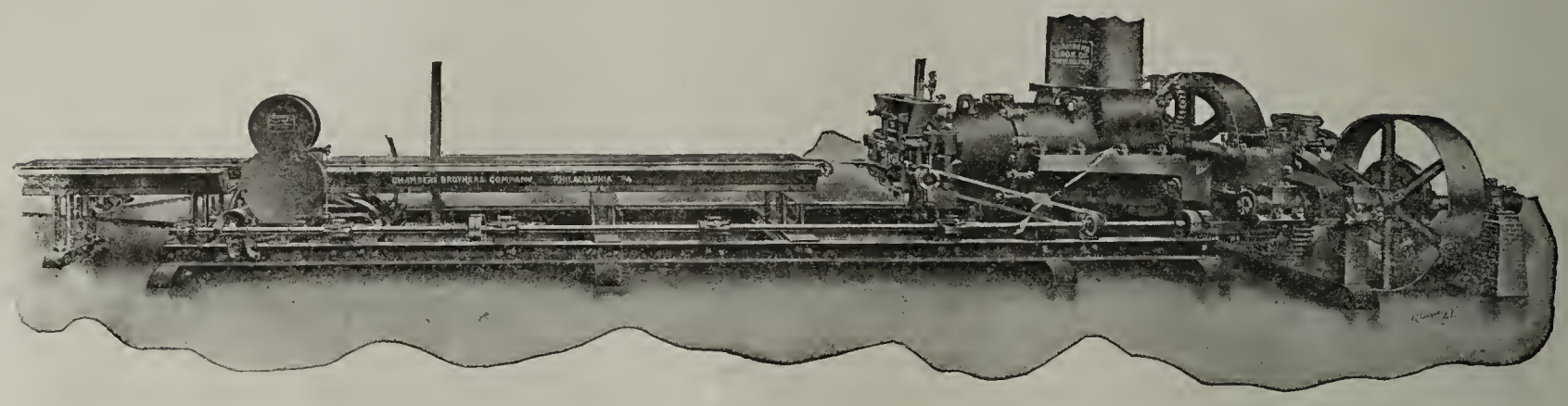

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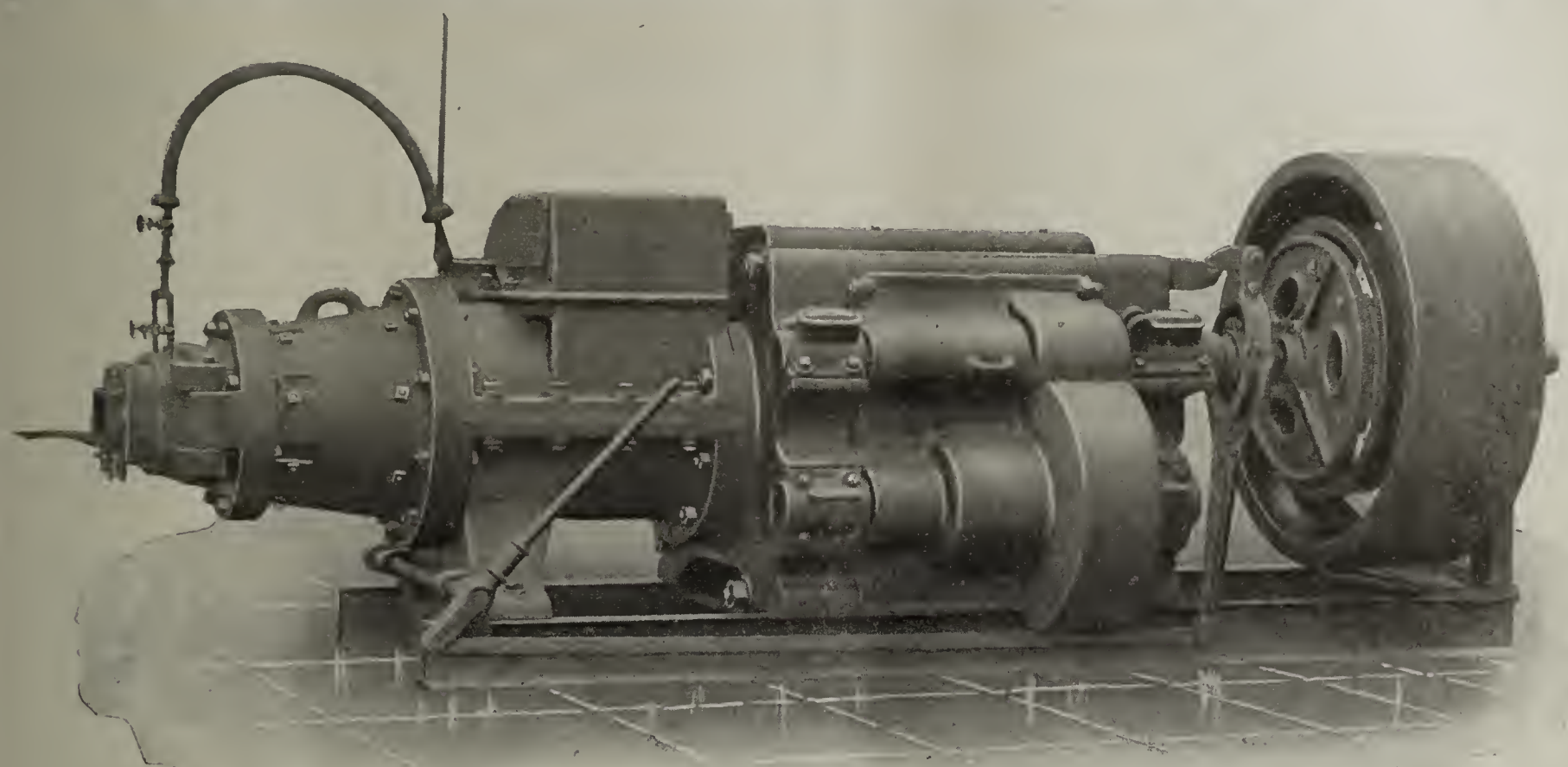

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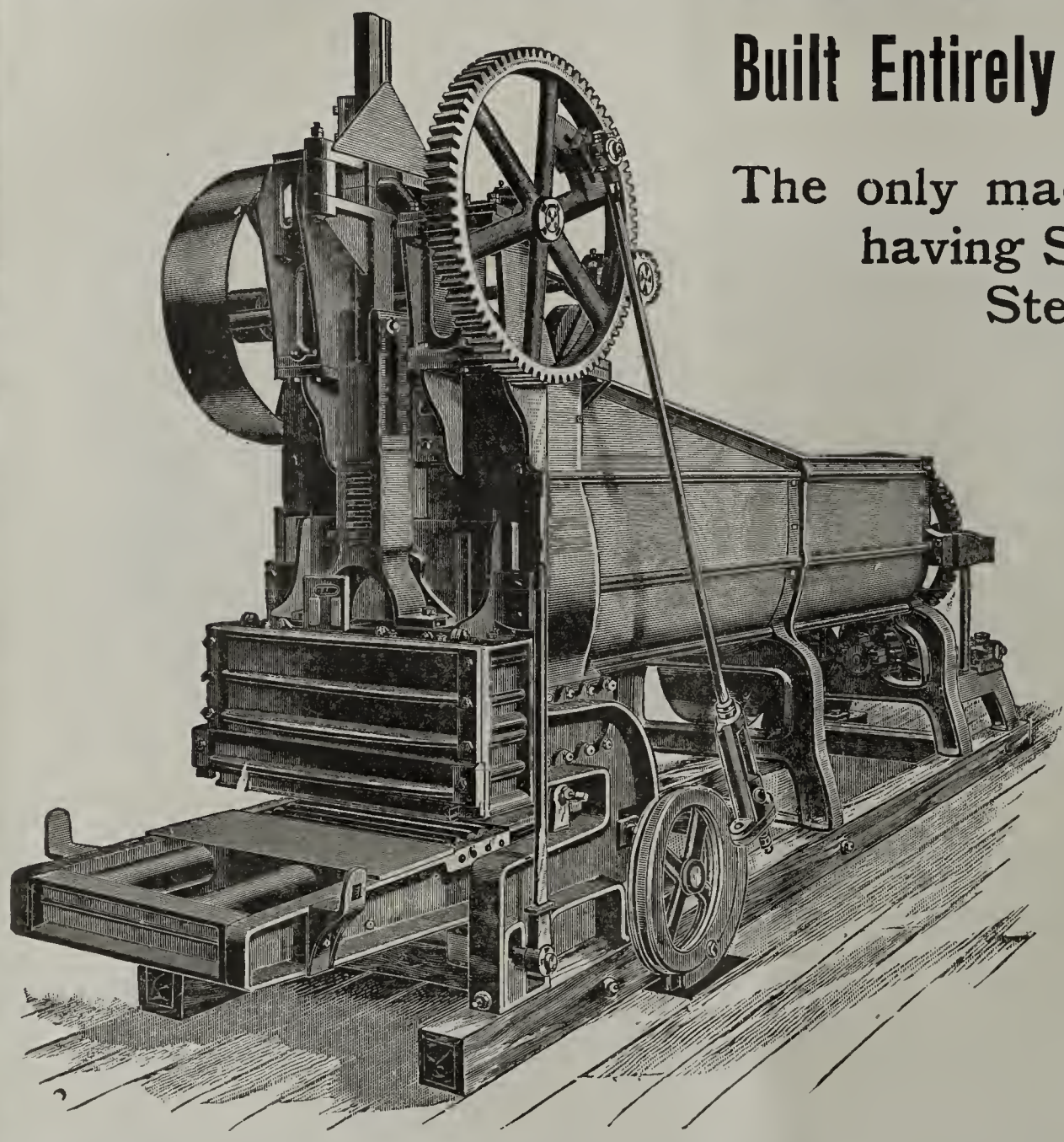

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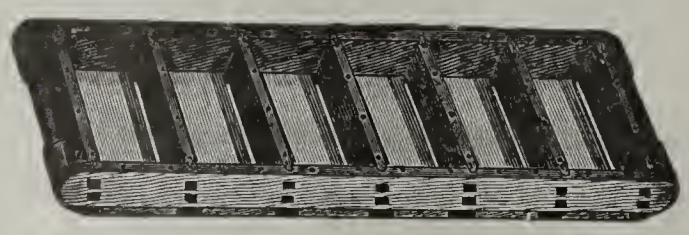

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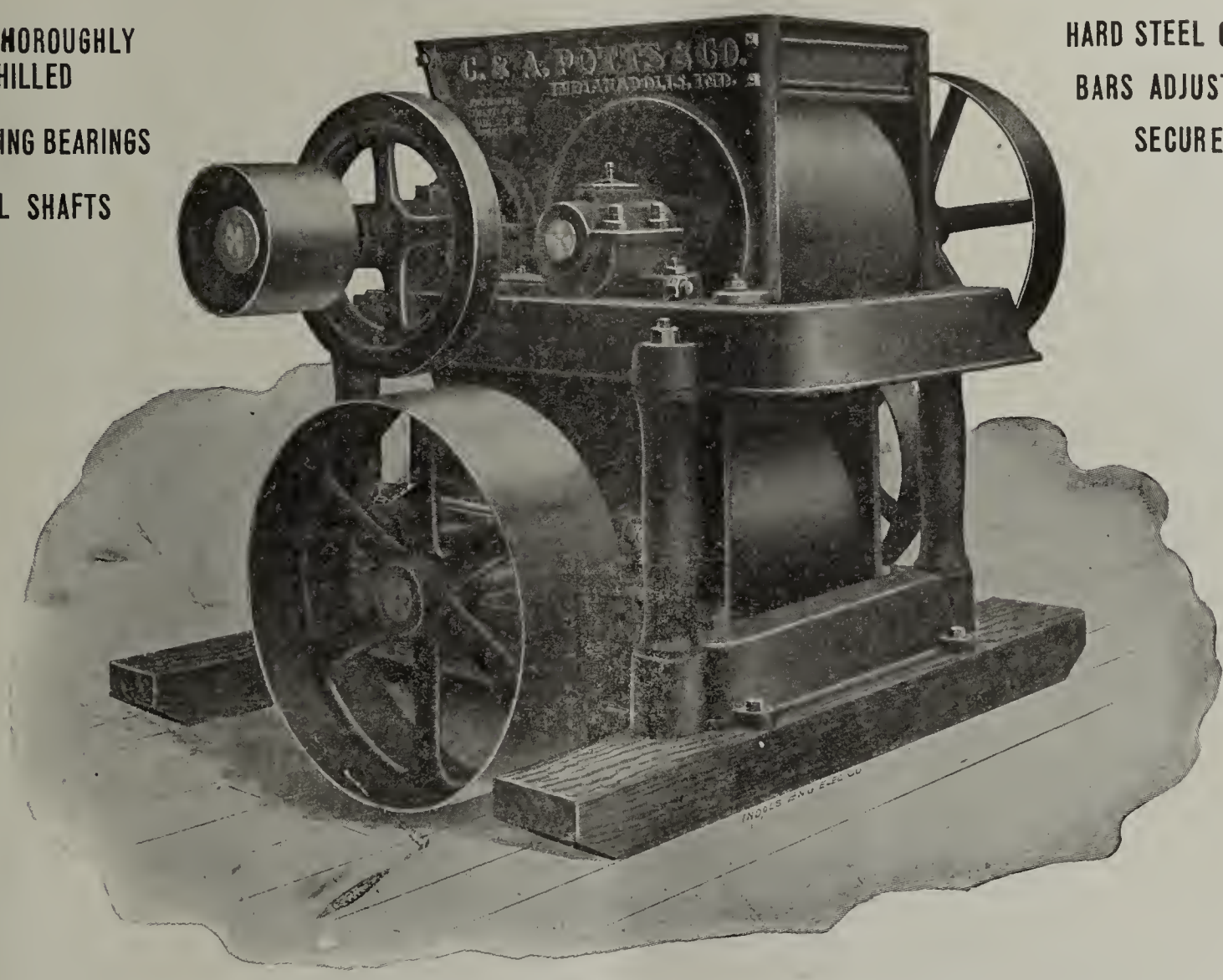

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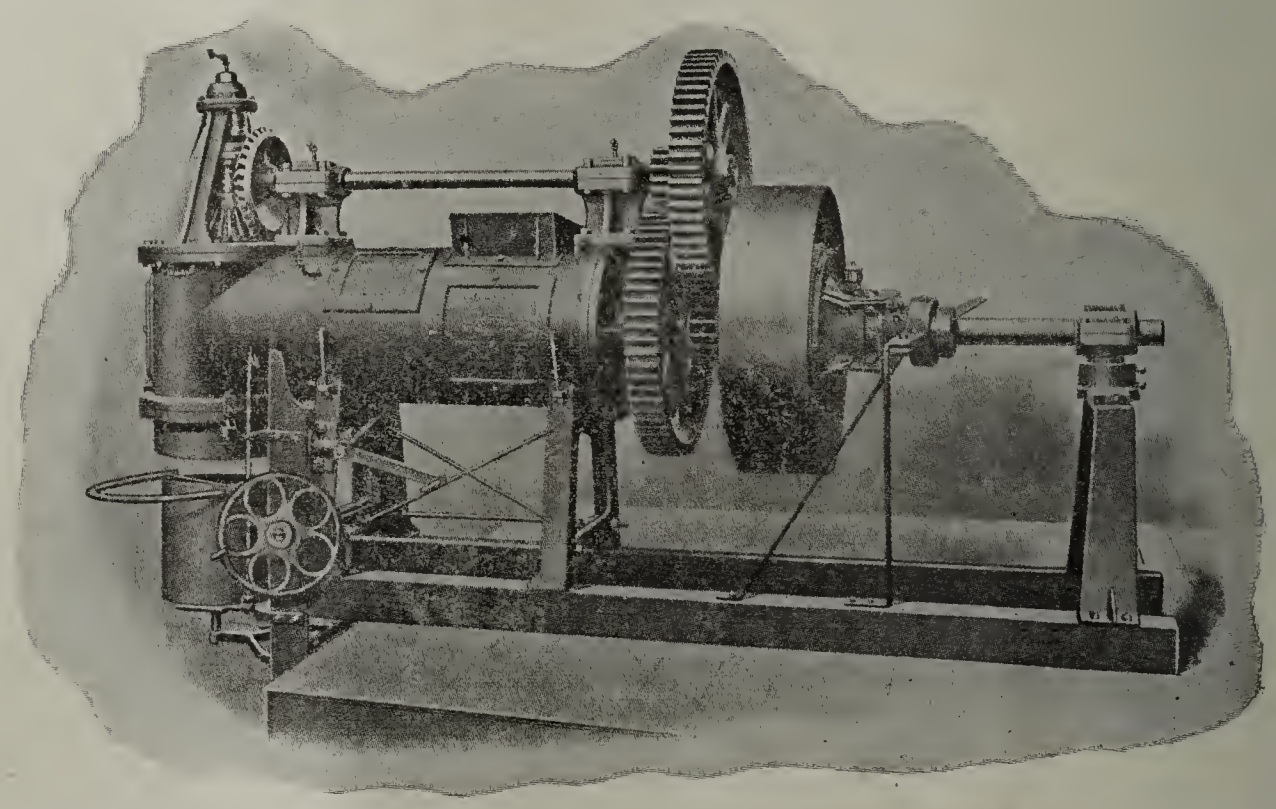

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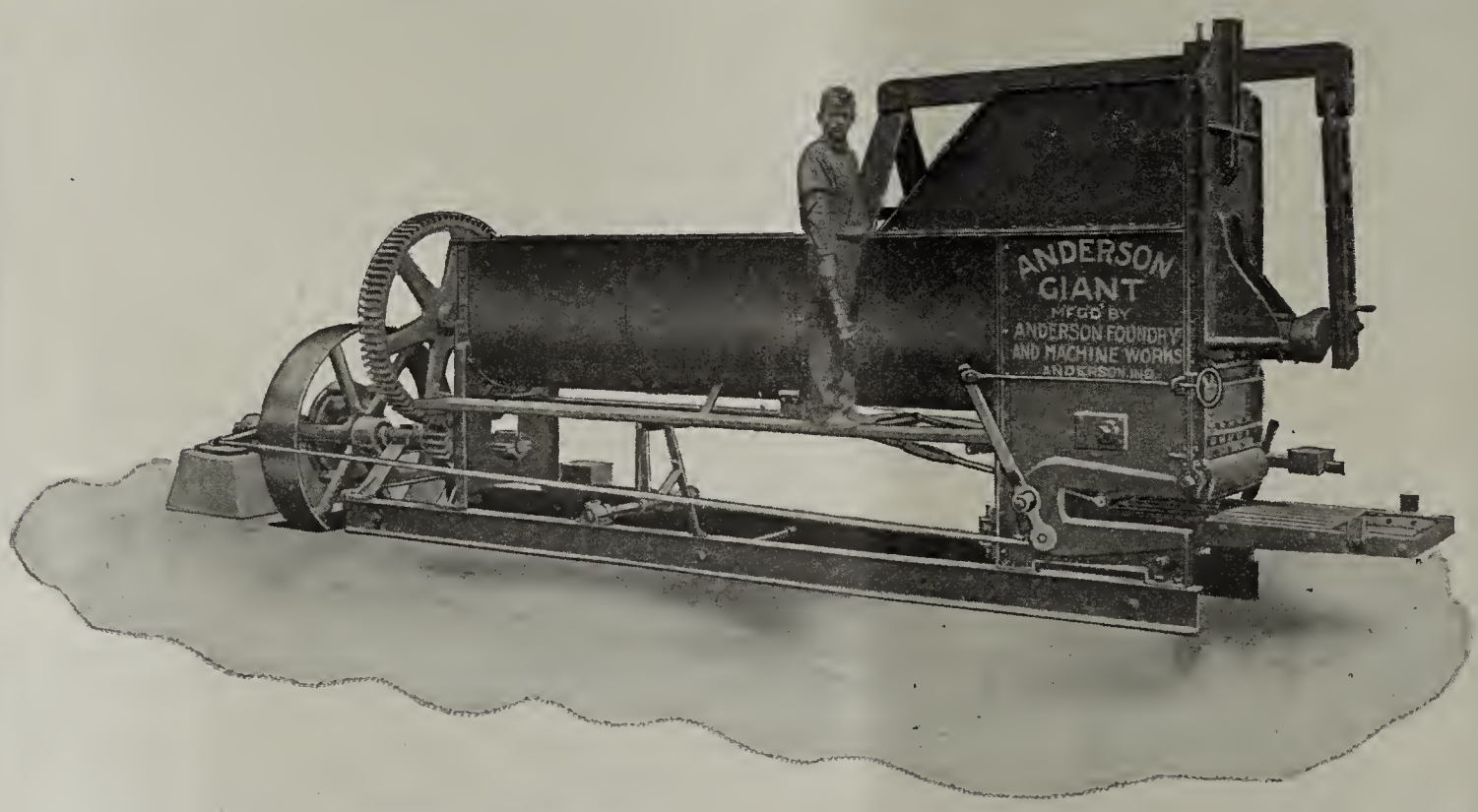

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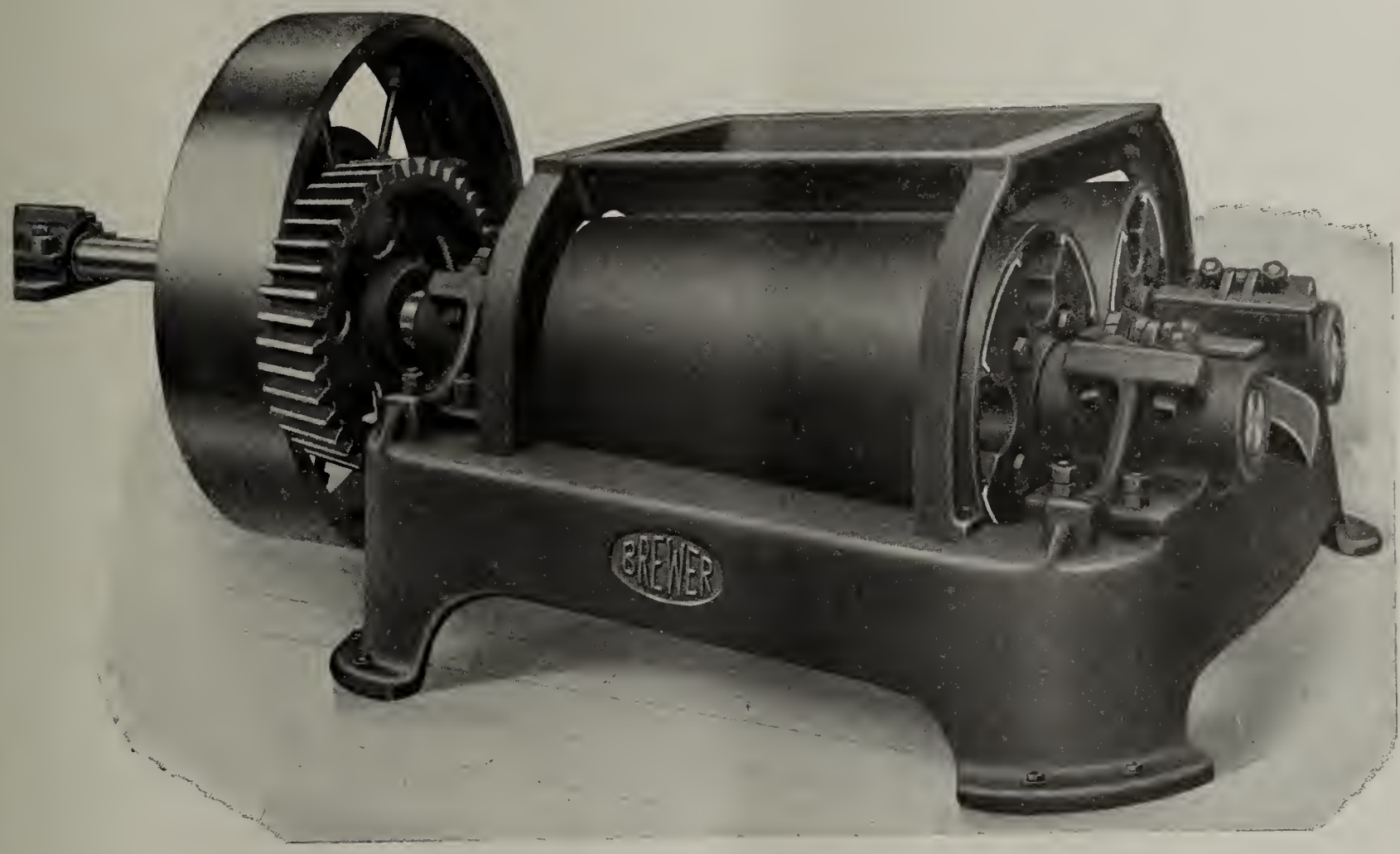

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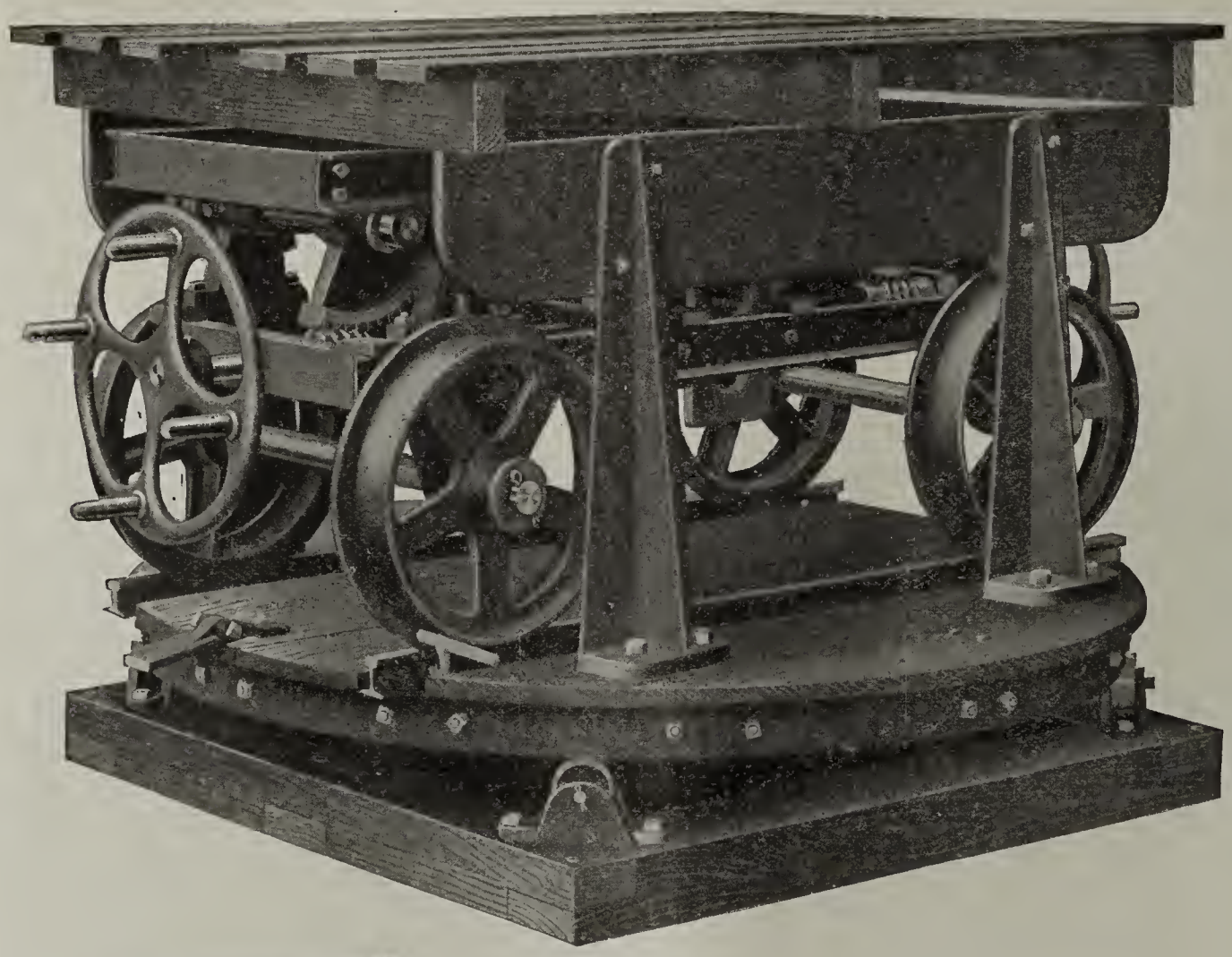

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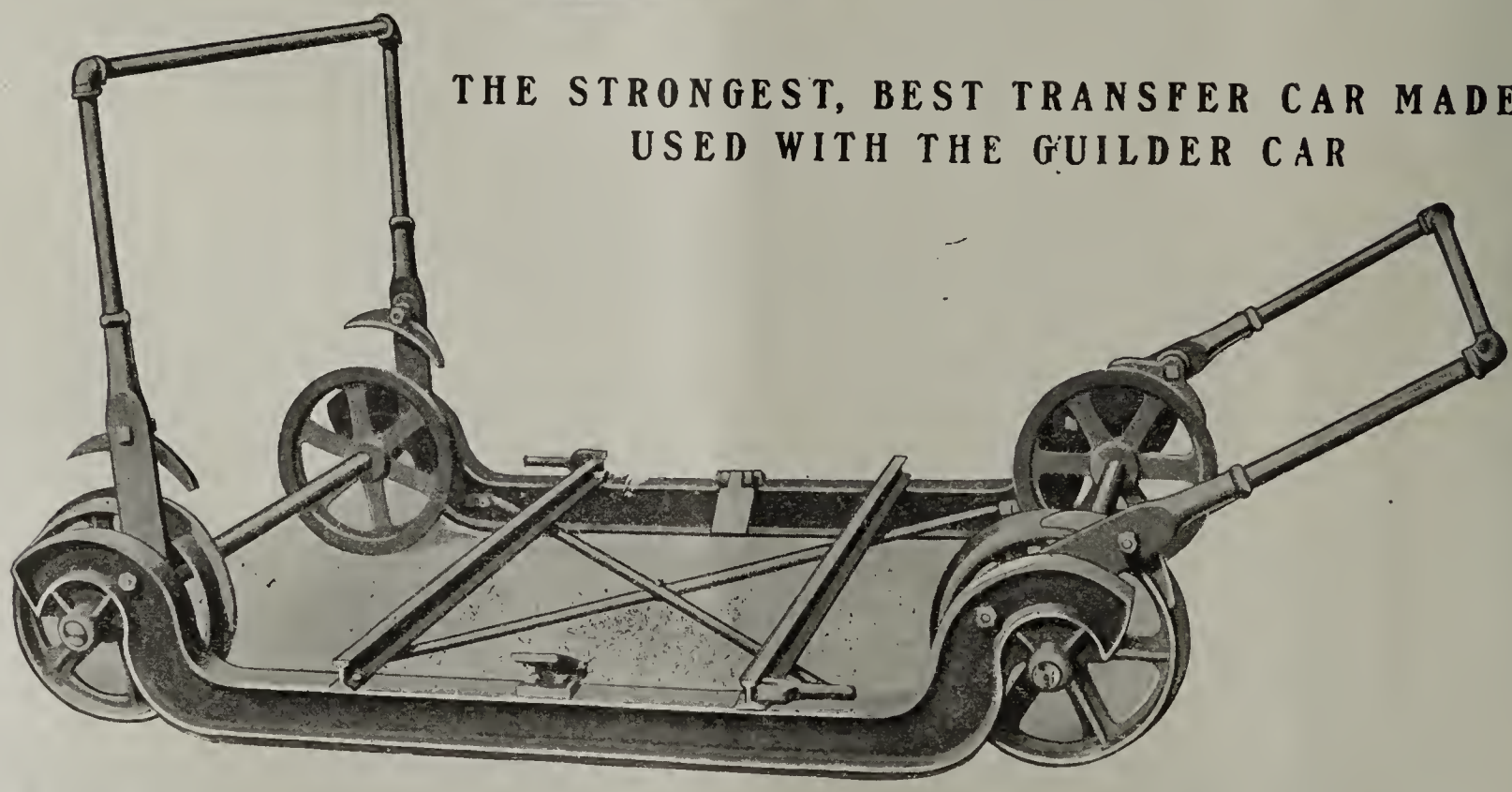

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CLAY RECORD

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THE CONSTRUCTION AND MANUFACTURE OF VITRIFIED BRICK.

Geo. W. Kummer.*

The primary element of a vitrified brick is a suitable clay; a mineralized clay, a clay that has annealing qualities. To lay down an inflexible rule as to what this clay should be, as by a chemical analysis, or to be specific in the matter of manufacture, as relates to the entire field of the brick industry, would be but idle words. There are no two veins of clay that are alike in their elemental structure, and, therefore, a corresponding latitude must be given in the discussion of this question, and which, from the nature thereof, must be treated in a somewhat general way or else I would feel that I was overstepping the bounds of propriety, and the very argument used might prove disastrous if generally applied. To meet the conditions of the subject matter, the clay must make a brick that is free from lime, from laminations, spalls, checks and cracks; that is homogeneous and impervious to moisture and that is vitrified. It must not lose more than a certain percentage in a so-called standard rattler; it must not absorb over a given percentage of water in a specified number of hours and its specific gravity is fixed. Here we have defined, arbitrary laws quite universally adopted.

It is impossible at all places successfully to manufacture perfect vitrified brick within the limits of defined specifications that are universal in their application; and I furthermore assert that high grade vitrified bricks are liable to fall below their entitled standard in value, because of what I am obliged to call inconsistent extremes in the matter of absorption on the one hand and the rattler test as the other extremity. I repeat that all clays vary, not alone in widely separated districts or portions of our land, but in the same locality as well, and therefore it is a physical impossibility without restriction to territory, to produce uniform brick that will show their best results under one defined system of testing, wherein the limits are set with no regard to the physical conditions of the material.

I repeat that, in the first place, a suitable clay, a mineralized clay, if you please, is required from which to make a vitrified, or—what I prefer to call—annealed brick. Secondly, the proper grinding of the clay and the perfect formation of the brick in the green state are absolutely essential. A vitrified brick of suitable clay properly made and finished, is in itself an iron-stone substance. By chemical action and changes during the various processes of manufacture, the constituent elements of the clay have been converted into new forms and the finished brick is a homogeneous mass, free from lime as an active element; is annealed, every clay particle being bonded, in short such a brick is an igneous rock, dense in its structure, practically impervious, resisting abrasion, and yet retaining grittiness in its structure, and in contact has an attractive force for steel and iron and is enduring to the end of time as against the deteriorating agencies of the elements.

It is a well-known fact that shrinkages of varying degrees occur in clays. To make the highest quality of vitrified brick uniform shrinkage must be had. It should be a clay that by the lapse of ages and under earth pressure, has been purified by chemical processes in nature's wondrous laboratory. Such clays are found in rock or shale form. It may be possible to make vitrified brick from a single clay, guaranteeing absolute uniformity of structure, or it may be possible to blend clay and a silicate to insure density and overcome porosity. Analyses of clays are common, yet the only true test, the only safe trial of a clay, is the manufacture of a sufficient quantity of brick for a burning in a regular kiln, in the regular way and tried out by the only infallible chemist known, fire. Though analyses are very similar of clays from different parts of the country, yet they can not be accepted as a safe guide as universally applied. The relative quantity of silica, alumina, iron, lime, magnesia, and so forth, may be set down as practically from the same clay, yet the active elements are not the same and a perfect product is impractical.

It is a well-known principle, that during the burning of clay in high heats, the silica and alumina form a silicate of alumina, which becomes the basis of the ware being made and here comes the diverging point as between a fire brick and a vitrified brick. If a clay will make a firebrick, it cannot make a vitrified brick, and the difference in the chemical action or bonding of the clay particles is an illustration of what a vitrified brick really is.

In a fireclay, the percentage of silica and alumina must be in such proportions that the iron and all other deleterious matters combined cannot successfully attach and disturb or unite with the basic matter, or on the other hand, for a firebrick, when the silica and alumina are held in bond, there cannot be an excessive amount of silica, else it becomes a free agent and the basic matter is

dissolved. If this destroying element is not present in a firebrick, then such brick, though thoroughly bonded, is porous; in short, has lungs, through the medium of which such brick has respiration meeting the demands of contraction and expansion, but under impact or abrasion lacks physical strength. If this condition, as above set forth is present in a so-called clay, perfect vitrification or annealing can not take place.

I have seen shale clays, highly refractory, that, when the point of fusion was reached, the entire mass of clay became honey-combed and when drawn from the kiln, such brick floated on the surface of the water like cork; whereas, brick made from clay, from another part of the country, yet in chemical analyses much like the former, when brought to the same degree of heat melted and made liquified clay, or vitrified molasses.

To make a good vitrified brick, I claim that the basic matter must be a silicate of alumina and the action from this point of amalgamation must be the reverse to that of making a firebrick. There must be a sufficient percentage of the basic matter to give a heat range, guaranteeing against fluxing when during the burning the crisis is reached of initial vitrification and melting. Yet a suitable clay for the manufacture of vitrified brick, whether a single product or a blend, must contain sufficient quantities of flux, of iron, and so forth, so that the necessarily inherent quality of refractoriness is overcome and a perfect amalgamation of clay particles takes place, giving the brick uniform structure, making it homogeneous.

Too much stress cannot be laid upon the absolute necessity of a uniform clay in the point of shrinkage, for in brick made of clays that have different shrinkages the clay particles can not be uniformly or cohesively bonded. Nor can brick made from such a mixture be burned perfectly, for clays of varying shrinkages must be measured according to the degrees of heat that they will endure before fluxing, and can only be carried in the heat range to the degree which the weakest portion of the clay mass will endure. Otherwise, they will be structurally weak. In outward appearance they may be high grade and they may even do themselves credit in the rattler test, as now so universally applied. They may even be tough, and particularly so when dry from a kiln.

Again, brick made from such mixed clays are more subject to laminations, owing to the unequal state of plasticity, and when in service after exposure to dampness and the action of the elements, and the constant impact of travel the weak spots manifest themselves and the brick spall and shell off by reason of imperfections which can not exist where a perfect bonding of clay particles is present throughout the entire brick, as is the case when a single clay or a blend of uniform shrinkage is used.

Having a suitable clay, the preparation thereof for brick making in the first step, i. e., the grinding, is an important one. Usually the shale or rock is reduced to small pieces by being run through a rock crusher, or, as in some cases, it is fed directly into what in the trade are known as dry pans. where it is ground into degrees of fitness as the manufacturer may direct, but it is not necessary in this paper to go into detail in the mechanical operation of brick making, only as to some special features as these points are reached in this discussion. The grinding of clay, however, is very important.

If there is a uniform fineness in the clay particles, the degree of fineness being governed by the character of the clay used, a uniform bond will result, but if the clay is not uniformly fine, or is not uniform in quality, there will be voids, and perfect amalgamation of particles will not take place. Nor is it possible to produce as strong a body, or as perfect a brick from a coarse ground clay that has been reduced to flour form.

The ground clay next goes to the tempering mills, water is ground into the clay to bring it to a degree of plasticity so that the brick can be formed and that they will have sufficient strength of adhesion of clay particles, so that they can be handled safely and will bear sufficient weight to permit piling on cars to be carried into tunnels where the water that has been ground into the clay is again driven off.

From the point of the dry clay in powdered form to the dried brick, the product has passed through very important stages that have much to do with the quality of the finished brick. In the tempering of the clay, during which the water is ground into the clay-mass, the subject of uniformity of action again plays an important part. While primarily this process is for the purpose, as above set forth, yet another very important factor in the brick structure here manifests itself, for it is during the time the brick is being formed and dried that the first or initial bonding of the infinitesimal particles takes place and it is a self-evident fact that if the clay-mass is not uniformly moistened, or not sufficiently moistened, there cannot be a perfect and uniform bond, an essential to perfect brick.

No more can, nor will clay particles form perfect cohesion when not uniformly tempered or properly moistened, nor if of widely varying degrees of fineness, than will a cement of similar degrees of irregularity in fineness set perfectly. It is during this stage of drying, when the mechanical water is being driven off, that the first shrinkages of the brick takes place, the degree of shrinkage from the general size being governed by the character of the clay used and therefore beyond the power of any set rule that can be laid down to control.

Before following the brick to the next stage beyond the point of drying, I want to go back in the process of manufacture to the clay in its tempered state, now being put into brick form. This is almost without exception through what is known as a stiff mud brick machine process. The tempered clay is fed into a steel case, of varying diameters, according to the capacity of the machine, and through the center of which case or cylinder is a revolving shaft to which are attached knives or blades, by the movements of which the clay is forced into and through dies, from which columns of clay issue in continuous lengths and which columns are, by mechanical device, cut into brick size and shape.

There are two styles of dies in use in forming these clay columns in the manufacture of the so-called standard size brick, which are approximately 2½x4x8½ inches. In one instance the column issues and is cut crosswise every 2½ inches, thus making what is known as side-cut brick. In the other case, two columns of clay issue from the die, the columns being cut every 8½ inches, thus making what is known as the end-cut brick. It is during this process of forming the clay columns that laminations in brick, if they exist, have their inception and it is in this mechanical construction that I maintain that special cars should be taken in the form or shape of the knives or blades, and particularly in the construction of the die in point of lines of issue guiding the clay.

I maintain that every clay has its own peculiar characteristic and dies constructed on the same pattern are not fit for general use. The degrees of plasticity or refractoriness of the clay must be thoroughly understood before the lines of a suitable die or issue can be safely drawn.

Again, it is not a safe plan indiscriminately to use a lubricated die, for some clays make a better brick when a dry die is used. In a lubricated die, the issue of the clay

column is absolutely free in all points of contact with the metal, giving no side resistance in the issue, whereas, there are high grade clays that demand this retarding influence to give the best internal structure to the brick.

This same principle carries back into the brick machine and should be the determining factor as between side-cut and end-cut brick. All laminations can be avoided in vitrified brick by a study of the clay, and the construction of mechanical appliances that are suited to the clay, as against the far too common practice of trying to make a clay suit the machine just because it makes brick successfully somewhere else and the machine man told you so.

Furthermore, while I know I am treading on disputed and possibly dangerous ground, yet I want to assert as my belief, that a better standard size brick can be made, with properly constructed dies, in end-cut form than if made side-cut, even if the side-cut is repressed and the end-cut is taken directly from the machine.

I take this position because in the side-cut article the clay issues approximately 4 inches thick by 8½ inches wide in a single column, which is cut at right angles through the breadth of the column; whereas, the end-cut brick columns, two to the issue, divided in the die by a steel center, issue 2½ inches wide and 4 inches thick each and are cut through the narrow column, the clay formation in the brick running with the column, whereas in the side-cut form the clay formation is cut at right angles and severed for each brick thickness.

Furthermore, it is a far simpler thing to construct a die that will control, and thereby guard against twists and laminations in slender clay columns than to overcome the same condition in a greater mass of clay in one issue.

After the brick has been formed, it is common practice to repress the product. Outside of shaping up the edges, or of forming lugs on the brick or of stamping the name of the maker upon the product, the repressing has no value and it is an open question, at least in the case of some clays, whether it is not an injury, caused by the sudden blow of the repress and the almost instant release of the pressure that is put upon the brick.

Referring again to the brick during the drying, the same inflexible law of conditions and quality of clay in respective districts controlling, the one general principle that is most important, is the time required and the time allowed for perfect evaporation of the mechanical moisture. No limit can be set for this as a universal rule to be observed. But the essential feature of this process is that the drying shall not be unduly forced, for it is during this season that the clay particles are adhering, and if this process of knitting is forced a perfect bond can not result.

A brick that is to be carried to a state of vitrification must have all the elements of perfection at the stage of coming from the dry kilns. It must have had the advantages of perfect and free circulation of air in the kilns, with increasing degrees of heat from the green state to the dried product, which is accomplished in modern brick driers by mechanical devices that operate most successfully to thermometer tests, the heat for this purpose, now almost universally being drawn from the kilns that have been finished and where the firing has ceased.

From the drier, through which the brick have gone on steel cars, the driers being in tunnel form, the brick are taken into a cooling room, where they remain until they can be handled by men when they are set in kilns ready for the final treatment by fire, which is one of the greatest destroying agencies, and yet makes from a true clay one of a very few things in existence that is not destroyed by the action of the elements, namely, a vitrified brick.

There are kilns of many styles, yet the true principle of a kiln is that it shall have a free draft. There are many ramifications in flues through which the heat is drawn, the principle being to so hold the heat and to so distribute it as to equalize it throughout the mass of brick that are being burned within one chamber. The important feature of this construction is that the flue space shall be adequate to the area of the chamber in which the fire shall be controlled.

The brick are set or piled in height according to what clay will endure and the manner of setting is again controlled by the nature of the clay forming the brick.

Again, each separate clay must be understood before suitable kilns in all their details can be built for its successful burning, which in its essential feature is the draft area and the application thereof.

During the burning of the brick, the mechanical water not eliminated in the driers is now driven off and this in turn, is followed by the elimination of the water held in bond in the chemical composition of the clay in its original state, and here is where the final shrinkage of the brick in the interlacing and knitting of the clay particles takes place and it is here where clays of excessive shrinkage or where mixed clays of uneven shrinkage, or where impure clays come to grief or leave their damaging effects within the finished product.

It is here, also, that the stability of the clay is tested in the matter of initial vitrification and melting. It is imperative that a clay has a fair range of heat in this respect, for if this margin is limited to a narrow basis, it is almost impossible to bring about uniform or satisfactory results in the final firing.

By ingenious and thoroughly practical devices now in use in modern brick plants, the elimination of the water by absorption, and the water in bond, is noted during the progress of burning. The degrees of heat in all important portions of the kiln are also recorded constantly from the light firing, as an initial burning, to the point of vitrification, and the measure of shrinkage that the brick is undergoing during the firing is carefully noted—these combined observations being a safe guide to the operator in charge. The word of caution that may here be spoken, with the ever present varying conditions of clays and what they will endure, is, do not force the firing beyond what the clay being burned will stand with safety; for if you do, the opened kiln will not defend your action.

We now come to the final act in the manufacture of vitrified brick, i. e., the cooling of the semi-molten mass. Here to be safe, to get the best product, the manufacturer must set aside the desire for gain, must turn a deaf ear to the clamor of contractor, engineer or layman, who may be crowding him and let nature take her course; for, as it is imperative during the burning to let the heat soak into and through the brick naturally and not under forced draft, so must this heat be permitted again to pass away. It is now that the work of making structures is taking place, and the mass is being annealed and toughened, and if this is checked in the slightest degree by too sudden cooling a weakened and imperfect, or a brittle product will be the result; but if permitted to work out under natural laws, with every condition present for the good, a product will come forth—as comes in many places and in ever increasing numbers—that is not to be excelled.

"How may a man tell a good vitrified brick when he sees it?"

Establish what is the average size of a satisfactorily burned vitrified brick, made from any given clay, for all uniformly made brick of uniform clay, uniformly burned, must be practically of uniform size when finished.

Test by absorption.

Establish a machine or device that shall hold the brick in place as they are in service and test by impact and abrasion as under traffic.

Then put a hammer into the hands of a practical inspector and let this hammer, by test of sound and by the fracture of brick, determine the quality. This quality lies entirely in the brick structure, and is not governed or determined by simple shades of color. It must be remembered that any clay that will vitrify cannot be burned to an absolute shade in color unless the degrees of heat are practically identical throughout the entire kiln area, which has never been possible as measured from top to bottom of the kiln, even in the burning of the highest grades of face brick, where uniformity of color or shade is much desired.

It is said above: "Test by absorption." But this must have its limitations, for vitrified brick will vary in the percentages of absorption from nil to various quantitative proportions, according to the degrees of heat to which they have been subjected in their relative position in the kiln during the burning, which is but a natural result of the absolutely esential element in clay of heat range between the point of initial vitrification and fluxing. The matter of absorption, the limitation to which it may be extended, here becomes an open book, and can readily be determined as a safe guide in tests and to guard against overburned brick; the hammer in the hands of a competent man is ever sufficient.

We have, in a vitrified brick, as I have endeavored to describe, a material that in structure and enduring qualities is not surpassed by any known material, for it is not affected by heat or cold, is not amenable to the deteriorating influences of the elements and is as lasting as is the lava that was emitted from the crater's mouth and has endured for centuries, and which has given us our first lesson in vitrification at the hands of the Great Creator.

KENTUCKY CLAYS BEING TESTED AT STATE UNIVERSITY.

Prof. H. D. Eastin of the college of mining engineering of State University, who is doing some work in connection with the state geological survey, has just begun a very interesting series of tests of clay from different parts of the state that are intended to determine the commercial value of each, so as to foster the development of the resources of the state along this particular line. The work is being carried on under the auspices of the department of ceramics of the survey and is a very interesting process.

All kinds of clays, from common building brick clay to the very precious kaoline, from which handsome pottery and chinaware are made, are molded and baked in pots, and tested to determine the tensile strength, shrinkage, etc. These tests are made in numerous ways, but the most interesting is the one with Kankin's revelation kiln, in which intense heat is applied to the models and their endurance and general quality thoroughly tested. The heat in this kiln is so great that no heat-measuring instrument can be used and it has to be measured by a series of cones which are different sizes and which melt only when a certain amount of heat is applied.

The most interesting of these burnings and tests are the ones with kaolin. This, which is very rare in Kentucky with the exception of a few counties, is in its natural state perfectly white, but when it has been baked it turns all the colors of the rainbow and the colors are very beautiful.

Kentucky has a great deal of wealth in her soil other than her crops and pasturage land, and the geological survey is doing much to foster the clay industries of the State.

THE CLAY-WORKING INDUSTRIES.

Chart Showing 1908 Statistics.

The United States Geological Survey has just published a large chart showing the statistics of the clay-working industries in 1908 by States and products, with comparative totals for 1907. This chart shows that the clay products of the United States in 1908 were valued at $133,197,762, compared with $158,942,369 in 1907, a decrease of about one-sixth. Every State and Territory except Alaska is represented in this total, a fact which shows the widespread character of the clay-working industries. Ohio is the leading clay-working State, reporting products worth $26,622,490, or 19.99 per cent of the total. Pennsylvania, New Jersey, Illinois, New York, Indiana, Missouri, California, Iowa, and West Virginia are the next largest producing States, in the order named. These ten States produced ware valued at $98,494,107, or nearly three-fourths of the value for the whole country. The first five States produced considerably over one-half of the total output. Wyoming has the smallest production, with products valued at $52,282, or only 0.04 per cent of the total.

COMMON BRICK.

Every State reported common brick, the total quantity being 7,811,046,000, valued at $44,765,614; this represents over one-third of the value of all clay products. Illinois is the leading producer of common brick, reporting 1,119,224,000, valued at $4,834,652, or $4.32 per thousand. New York is the second in quantity but first in value the figures being 1,055,006,000, valued at $5,066,084, or $4.80 per thousand. The average value per thousand ranged from $3.97 in Kansas to $10.33 in Wyoming, with a general average of $5.73. Tennessee comes the nearest to the general average—$5.72. The average value in 1907 was $6 for the whole country.

There was a decrease in the value of the common brick from 1907 of $14,079,847, or 23.85 per cent, and the quantity decreased 1,984,652,000, or 20.26 per cent. The only States showing increases in output of common brick were Arizona, Idaho, Nevada, Montana, Oregon, South Dakota, and Washington, and of these States Washington showed a decrease in value.

VITRIFIED PAVING BRICK.

Vitrified paving brick is one of the only two products that showed an increase in 1908. This product increased from 876,245,000 in 1907 to 978,122,000 in 1908, a gain of 11.63 per cent; and in value from $9,654,282 in 1907 to $10,657,475 in 1908, a gain of 10.39 per cent. Ohio is the leading State for vitrified paving brick, reporting about one-third of the entire quantity and value.

DRAIN, TILE, FIRE BRICK AND POTTERY PRODUCTS.

Drain tile is the other product that reported a gain in 1908, the increase being from $6,864,162 in 1907 to $8,661,476 in 1908, or 26.18 per cent. This product finds its largest use in the Middle West—Iowa, Indiana, Ohio, Illinois, and Michigan reporting 89.84 per cent of the total.

Fire brick was reported in 1908 to the value of $10,696,216, compared with $14,946,045 in 1907, a decrease of 28.43 per cent. The quantity decreased from 783,017,000 in 1907 to 552,366,000 in 1908, a loss of 29.46 per cent.

Pottery products decreased in value from $30,143,474 in 1907 to $25,135,555, a loss of 16.61 per cent. The value of the pottery products was nearly one-fifth of the value of all clay products.

Copies of this chart may be had by addressing the Director, United States Geological Survey, Washington, D. C.

CLAY PRODUCTS OF THE UNITED STATES, 1908

WITH CORRESPONDING TOTALS FOR 1907

STATE.	RANK.	COMMON BRICK. Quantity. (Thousands.)	Value.	Average price per thousand.	VITRIFIED BRICK OR BLOCK. Quantity. (Thousands.)	Value.	Average price per thousand.	FRONT BRICK. Quantity. (Thousands.)	Value.	Average price per thousand.	FANCY OR ORNAMENTAL BRICK. (Value.)	DRAINTILE. (Value.)	SEWER PIPE. (Value.)	ARCHITECTURAL TERRA COTTA. (Value.)	FIREPROOFING. (Value.)	TILE, NOT DRAIN. (Value.)	STOVE LINING. (Value.)	FIRE BRICK. Quantity. (Thousands.)	Value.	Average price per thousand.	MISCELLANEOUS.[a] (Value.)	TOTAL BRICK AND TILE. (Value.)	POTTERY (Value.)	TOTAL. (Value.)	PERCENTAGE OF TOTAL.	STATE
Alabama	19	120,657	$690,963	$5.75	18,248	$344,064	$18.88	(b)	(b)	$17.89	(b)	$2,046	(b)		(b)			7,483	$122,354	$19.34	$10,819	$1,539,517	$24,089	$1,539,606	1.17	Alabama.
Arizona	44	11,239	104,042	9.22				(b)	(b)	17.27												104,892		104,992	.08	Arizona.
Arkansas	25	57,650	988,617	8.75	(b)	(b)	7.06	450	85,550	18.07		9,230						(b)	(b)	19.19		431,388	97,500	806,788	.39	Arkansas.
California	9	236,333	1,562,814	9.74	9,499	66,914	19.22	18,922	253,701	22.89	$34,347	84,457	$1,036,630	$500,130	$165,221	$34,434	(b)	19,226	325,780	36.64	918,619	4,438,818	87,198	4,523,745	9.40	California.
Colorado	15	118,838	796,733	7.06	9,973	80,962	18.76	31,667	344,347	11.51	34,777	16,472	(b)	(b)	(b)	(b)		10,199	206,161	20.23	167,967	1,920,974	49,407	1,970,081	1.49	Colorado.
Conn. and Rhoda Island	27	151,760	748,063	9.69	(b)	(b)	19.34	(b)	(b)	19.75							(b)	(b)	(b)	23.00		995,561	c 78,000	901,561	.68	Conn. and Rhoda Island.
Delaware	42	15,899	199,127	9.19				(b)	(b)	13.00		(b)										146,527		146,527	.11	Delaware.
District of Columbia	39	23,981	177,503	7.42				(b)	(b)	13.00		(b)	(b)		(b)						6,000	268,600	(b)	965,600	.20	District of Columbia.
Florida	40	98,559	225,441	5.65				(b)	(b)	6.00		(b)						(b)	(b)	17.76	70	853,162		843,162	.17	Florida.
Georgia	19	346,869	1,835,348	5.67	(b)	(b)	19.60	2,929	34,385	11.74		(b)	253,664	(b)	(b)	(b)		6,296	63,486	19.22		1,917,960	10,651	1,998,611	1.43	Georgia.
Idaho and Nevada	39	96,814	919,638	9.50	(b)	(b)	25.00	827	17,600	21.28								(b)	(b)	40.00		338,656		859,856	.25	Idaho and Nevada.
Illinois	4	1,119,294	4,634,659	4.39	188,362	1,622,496	11.73	23,851	301,515	19.19	(b)	1,421,678	514,286	(b)	264,986	194,425	(b)	15,964	250,444	15.67	2,928	10,769,160	806,954	11,559,114	8.99	Illinois.
Indiana	9	224,454	1,221,310	9.44	57,748	778,538	13.45	34,338	403,845	11.76	(b)	1,797,339	486,946	(b)	359,917	505,908		9,445	115,896	18.72	265,974	5,979,977	780,490	6,740,187	5.06	Indiana.
Iowa	6	163,873	904,308	9.67	18,878	185,119	11.10	7,900	88,539	10.39	(b)	3,509,505	311,044		129,008						61,888	4,050,787	18,710	4,069,497	9.06	Iowa.
Kansas	11	225,990	696,542	9.97	108,922	362,019	9.86	20,477	233,878	7.92	(b)	22,858	(b)	(b)	(b)	(b)		(b)	(b)	17.56	19,635	2,948,805	(b)	3,343,809	1.89	Kansas.
Kentucky	12	110,545	657,365	8.22	(b)	(b)	16.34	11,067	118,788	10.98		53,306	(b)		7,263	916,000		44,358	770,991	17.36		9,085,460	153,648	9,989,108	1.98	Kentucky.
Louisiana	30	77,856	547,160	7.03				2,991	36,799	12.30		(b)									99,501	683,753	6,171	629,924	.47	Louisiana
Maine	34	45,119	308,959	8.72	(b)	(b)	19.77	1,640	18,950	8.51	(b)	6,758	(b)					(b)	(b)	15.00		542,730	(b)	542,730	.41	Maine.
Maryland	29	141,071	328,981	5.86	(b)	(b)	12.06	938	12,498	14.42	1,463	8,536		(b)		(b)	$23,886	9,276	179,469	17.96	9,900	1,186,412	975,657	1,441,099	1.08	Maryland.
Massachusetts	18	141,591	960,991	6.79				1,899	34,069	17.96	(b)				(b)	104,886	169,811	1,716	63,941	38.85		1,397,836	949,796	1,647,362	1.24	Massachusetts.
Michigan	17	181,049	994,525	9.42	8,165	78,630	12.43	1,996	19,496	10.83		997,630	(b)		9,100	(b)					40,100	1,688,881	82,409	1,798,790	1.30	Michigan.
Minnesota	20	145,719	988,539	6.37	(b)	(b)	9.00	9,900	116,960	19.01	(b)	70,161	(b)		45,940			(b)	(b)	15.00		1,506,710	(b)	1,506,710	1.19	Minnesota.
Mississippi	38	119,999	748,058	6.89				788	11,837	15.02	(b)	38,000						(b)	(b)	16.15	6,000	806,889	91,850	898,739	.62	Mississippi.
Missouri	7	219,536	1,465,311	8.67	56,809	647,097	11.39	28,136	356,752	11.16	25,035	79,865	962,116	(b)	105,126	(b)	(b)	80,544	1,957,987	99.42	58,555	5,568,648	88,908	5,631,458	4.33	Missouri.
Montana	33	94,065	510,968	9.19	(b)	(b)	20.00	(b)	(b)	20.06	(b)	(b)	(b)		(b)	(b)		966	40,890	47.11		587,525	(b)	587,525	.29	Montana.
Nebraska	36	114,896	788,148	9.70	(b)	(b)	7.59	(b)	(b)	18.99	(b)	18,348			63,181			(b)	(b)	25.00	18,518	948,518		948,518	.71	Nebraska.
New Hampshire	37	80,679	363,400	7.95							(b)							(b)	(b)	30.00		371,640	(b)	371,640	.26	New Hampshire.
New Jersey	8	300,544	1,579,835	6.96	(b)	(b)	11.48	64,302	667,632	10.38	9,919	30,335	(b)	1,039,856	326,294	233,426	(b)	38,751	600,987	21.78	935,978	6,383,708	5,949,991	12,318,696	9.24	New Jersey.
New Mexico	43	11,992	90,499	8.01	(b)	(b)	10.07	(b)	(b)	19.47								(b)	(b)	24.61	919	140,871	(b)	140,871	.11	New Mexico.
New York	5	1,055,008	5,068,084	4.80	14,870	211,990	14.80	9,721	135,342	13.96	(b)	978,681	133,718	709,966	123,895	48,998	108,965	19,389	436,847	35.55	65,800	7,970,981	1,658,243	8,999,924	6.70	New York.
North Carolina	28	144,169	900,611	6.95	(b)	(b)	9.00	500	2,700	9.00		1,635	(b)		(b)			700	7,560	10.80		930,606	13,362	943,968	.71	North Carolina.
North Dakota	41	17,478	138,960	7.80				4,159	63,676	15.38	(b)	(b)			(b)			(b)	(b)	35.57		906,222		206,222	.15	North Dakota.
Ohio	1	869,410	9,105,910	5.70	397,718	6,239,335	9.80	94,435	1,007,886	11.81	36,369	1,725,469	6,818,971		555,667	1,486,049	(b)	94,427	1,339,810	15.87	444,901	15,915,703	10,706,787	98,622,490	19.99	Ohio.
Oklahoma	39	74,836	457,588	6.11	7,651	71,545	9.81	1,321	16,010	13.01	(b)	(b)						(b)	(b)	40.00	16,000	562,929		582,829	.42	Oklahoma.
Oregon	33	43,732	373,006	9.58				988	36,927	99.64	(b)	84,458	(b)		(b)			258	6,586	96.06		555,768	(b)	655,768	.42	Oregon.
Pennsylvania	9	717,016	4,586,978	6.38	90,044	1,036,954	11.58	124,642	1,403,594	11.26	49,199	14,904	578,800	998,698	841,175	287,948	199,689	929,389	4,952,325	19.12	571,832	13,586,479	1,376,503	14,842,982	11.14	Pennsylvania.
South Carolina	31	98,827	573,572	5.80				(b)	(b)	11.00		(b)						9,128	80,957	14.22		606,779	9,469	616,248	.46	South Carolina.
South Dakota	46	5,863	57,947	9.71				(b)	(b)	18.50												63,847		63,847	.05	South Dakota.
Tennessee	23	134,171	767,773	5.79	(b)	(b)	11.48	9,494	108,928	10.87	1,505	98,114	(b)		(b)			1,881	91,029	11.55		1,123,809	119,632	1,288,434	.93	Tennessee.
Texas	14	194,551	1,285,657	8.61	(b)	(b)	10.81	10,411	154,298	14.89		5,276	(b)		(b)	(b)		9,796	69,039	18.19	10,142	1,941,586	126,146	2,068,735	1.55	Texas.
Utah	29	48,645	351,827	7.93				15,939	175,378	11.54	(b)	2,671	(b)					1,168	35,595	30.48	6,945	655,067	9,450	658,517	.49	Utah.
Vermont	45	10,419	62,172	6.97								(b)					(b)					86,084		89,084	.07	Vermont.
Virginia	21	185,738	1,216,948	6.57				17,856	246,623	16.61	(b)	7,100	(b)					(b)	(b)	15.89	3,480	1,496,130	(b)	1,489,130	1.13	Virginia.
Washington	13	107,638	817,862	7.80	(b)	(b)	18.82	4,011	119,746	99.11		98,551	493,165	171,845	45,209			1,407	42,045	26.88	3,991	9,083,888	20,601	8,104,989	1.58	Washington.
West Virginia	10	47,402	600,776	6.35	70,924	718,017	10.19	(b)	(b)	14.16		2,649	(b)		(b)	49,220		9,602	88,943	14.87		1,177,615	9,083,891	3,261,738	2.45	West Virginia.
Wisconsin	24	199,041	880,949	6.43				4,846	41,889	8.99	(b)	74,709			(b)	(b)						946,095	9,800	955,895	.79	Wisconsin.
Wyoming	47	4,561	47,117	10.33				984	5,165	14.59												52,282		53,982	.04	Wyoming.
Other States[d]					64,362	875,587	13.60	16,800	954,170	15.81	69,702	96,419	9,414,603	1,766,580	219,492	142,809	103,956	7,573	196,925	17.16		(c)	[f]467,924	[f]467,924	.35	Other States.[d]
United States		7,811,046	44,765,614	6.73	978,129	10,657,475	10.90	584,489	6,935,600	11.87	[g]920,418	9,661,476	11,003,731	4,577,367	3,163,037	6,877,780	529,976	959,366	10,696,818	19.36	9,965,517	108,069,207	26,135,585	138,197,782	100.00	United States.
Percentage of total				33.81			9.00			9.91		.99	9.50	3.96	3.44	2.33	9.91	.40		9.03		1.70	81.13	18.87	100.00		Percentage of total.
Total, 1907		9,796,698	58,786,461	6.00	978,345	9,654,988	11.02	585,943	7,889,380	13.51	[h]1,979,419	6,864,168	11,482,945	6,096,977	4,950,619	4,891,851	897,947	763,017	14,946,049	19.06	8,000,201	103,798,895	30,143,474	133,942,369		Total, 1907.

[a] Including adobes, assayer's supplies, brick for chemical purposes, burnt clay ballast, charcoal furnaces, chimney pipe, flues and tops, conduits, crucibles, curbing, flue lining, gas logs, glass house supplies, muffles, radial chimney brick, retorts, scorifiers, sewer brick, sleeves and nozzles, stone pumps, vases and ornaments, and wall coping.

[b] Included in "Other States."

[c] Produced by Connecticut alone.

[d] Includes all products made by less than three producers in one State.

[e] The total of "Other States" is distributed among the States to which it belongs in order that they may be fully represented in the totals.

[f] Undistributed pottery products.

[g] Including enameled brick valued at $660,862, made in the following States: California, Illinois, Maryland, Missouri, New Jersey, and Pennsylvania.

[h] Including enameled brick valued at $918,173, made in the following States: California, Colorado, Illinois, Maryland, New Jersey, and Pennsylvania.

THE BRICK INDUSTRY OF EVANSVILLE.

Evansville, the thriving industrial center of Southern Indiana, is the home of the Standard Brick Mfg. Company, who are operating several of the best plants in the southwest. William Suhrheinrich is president, H. C. Kleymeyer, general manager, and John Andres, secretary, H. Kleymeyer and F. Klutey, of the Kleymeyer-Klutey Brick & Tile Works, Henderson, Kentucky, are also stockholders and directors. 125 men are employed at the Evansville yards, the annual capacity being 20,000,000 brick which is at present fully sufficient to supply local trade and the territory for many miles around.

The company's largest plant is located on the Upper Mt. Vernon Road at the intersection of Tekoppel avenue on the western outskirts of the city. Here was found skillful arrangement of this machinery makes it possible for two men to haul the clay from the pit, pass it through the various reducing machinery, over the conveying system and distribute it in the storage shed, the daily capacity being enough to make 60,000 brick.

After the shale has gone through a sweating process, during a period averaging sixty days, it is then in further preparation run through a high speed Fernholtz pulverizer, a set of Dunlap revolving screens, a rotary clay mixer, and then fed into two Berg dry presses, where the brick are moulded into shape four at a time. This equipment is in duplicate, giving the plant a capacity of 40,000 brick per day, by what is called the dry press process.

The kiln in which the brick are burned is a Haigh semi-

Standard Brick Manufacturing Co's. Plant at Evansville, Ind.

a large deposit of carboniferous shale, a hard, rock-like substance which must be blasted. It is hauled up an incline track by drum and cable to a tipple-dump, from which it is fed into a rock crusher which breaks up the larger lumps. From here the shale is transferred by a belt conveyor to a mixing machine where enough water is added to give the clay the proper dampness; then it is dropped into a nine foot Raymond dry pan which reduces the lumps to about the size of rice kernels, after which it is elevated and carried to the storage shed by a system of Jeffrey's conveyors which distribute the material to all parts of the immense shed which holds clay enough for a million and half brick, and provides for the weathering of the clay as well as for the steady operation of the plant regardless of weather conditions. The continuous kiln, consisting of 36 chambers, the draft being furnished through a subterranean tunnel connected with a brick stack 150 ft. high, 7 ft. in diameter inside and 14 ft. on the foundations. Each of the chambers has a capacity of 20,000 brick, three sets of chambers to each machine being kept under fire constantly while some of the chambers are cooling, and others are being emptied and then refilled.

Since building the Haigh kiln, which superseded four immense up draft kilns, the product at this yard has been greatly improved. Scarcely any salmon brick being found in any of the chambers, and the saving in fuel is considerable.

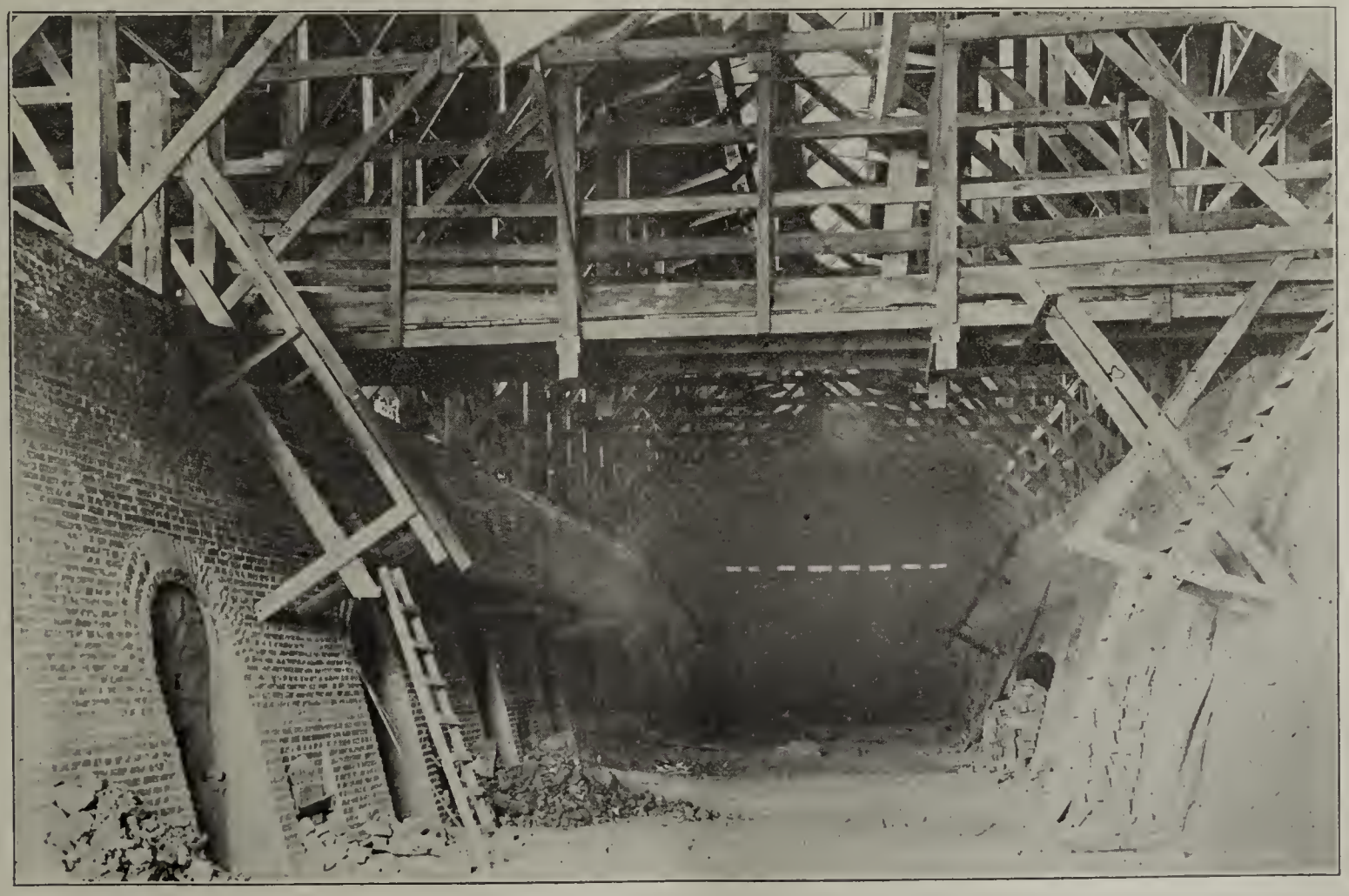
At plant No. 2 in the extreme eastern part of the city, the company is making soft mud brick on an Arnold-

Creager machine at the rate of 30,000 per day, the three large up draft kilns being equipped with the Boss system of burning and the fan is driven by an electric motor.

The principal stockholders in the Standard Company also control the First Avenue Brick & Tile Company plant just north of the city. Herman Bredenkamp is superintendent. Here also a red sand mould brick is made on the Potts machine and drain tile on machinery installed by the American Clay Machinery Company, the drying of the material is accomplished in two tunnels dryers, situated 100 ft. apart, a 15 track dryer for the brick, and a six track dryer for the drain tile, the hot blast system being used, a 12 ft. Green fuel economizer fan and heaters supply both dryers.

The company is fortunate in the location of their three plants, having one in each end of the city, which enables them to handle any contract wherever situated to advantage. Their land holdings are extensive, the combined total being 140 acres, the shale bank at plant No. 1 running to a depth 50 ft. Altogether the clay deposits in sight are ample to supply the demand for fifty to one hundred years.

Showing end of Haigh Continuous Kiln at Standard Brick Works.



Interior view of Shed over Haigh Kiln at Evansville.

ARTIFICIAL DRYING AS AN INVESTMENT.

By M. W. Blair, St. Louis, Mo.

The artificial drying of clay ware, especially the cheaper products, such as building brick and drain tile, has been given considerable attention in the last few years. There are many able gentlemen who still advocate the open air or natural method, modified, it is true, by sheds that fold up and close that a child can handle, but crude, expensive and out-of-date nevertheless. The first and a natural question of a manufacturer is, "Does it pay?". "And if not, why has my competitor built one?" It is my intention to direct your attention to a few facts in an endeavor to answer these questions.

Leaving out of the question for a moment the direct, tangible money return, some of the advantages of artificial drying are these, i. e.

It condenses the plant, reducing the general operating costs, fire risks and factory investment.

It enables the capital invested to work practically the year round, and makes possible a more permanent working force.

It enables a plant to stock up during the winter months for the active demand of spring when prices are best, and enables a small plant to thus handle larger contracts than it otherwise could.

It renders a plant practically independent of weather conditions, and makes the operation of the plant practically continuous, thus deriving all the benefit possible from machinery and kiln equipment, which are otherwise many times in a season made entirely useless by a twenty-minute summer shower.

It lessens the danger of damaged ware from rain and breakage in handling.

These points doubtless cover the reasons your competitor had for putting in a dryer and in part tells why you should follow his example.

There are a few clays which cannot be dried in an artificial dryer of proper construction. The reason why seemingly workable clays have not been successfully dried is not so much the fault of the clay or of the dryer, as popularly supposed, as it is the fault of the structure of the clay column as it comes from the machine. I fully believe that 75 per cent of the trouble in drying is due to this and other causes outside the dryer.

The blame for cracked ware, centerchecks and other defects which only manifest themselves upon drying have for years been attributed to faulty dryers. I maintain that if the selection and preparation of the clay and mechanical construction of the machine were correct it would be impossible from the same clay and under the same conditions of manufacture to produce such a wide range of quality as is actually found

It is difficult to determine the earning power of a dryer in dollars and cents, as the amount varies with each individual case, but it can be shown that they will pay in actual cash for their construction and operation. The advantages mentioned may therefore be considered as profit.

Suppose we look for a moment at a dryer of twenty thousand daily capacity. The cost of buildings and equipment will average about $300 per thousand brick, daily capacity. Taking 20,000 as a basis the cost of drying, using waste heat from cooling kilns, per year would be:

Interest $6,000 at 6 per cent	$ 360.00
Depreciation $6,000 at 10 per cent	600.00
Fuel (steam for fans) 20 H.P. coal at $3.00	864.00
	$1,824.00

For a direct fired, radiated heat dryer the cost would be about the same:

Interest $6,000 at 6 per cent	$ 360.00
Depreciation $6,000 at 10 per cent	600.00
Fuel 300 lb. per 1,000 brick	2025.00
	$2,985.00

*Read at the Ninth Annual Meeting of the Wisconsin Clay Manufacturers' Association, held at Milwaukee.

For live steam the fuel cost would run about the same, but there would be the added expense of repairs and annoyance of operation.

The cost of an open-air system to handle 20 M will vary from $1,000 to $2,000.

Interest at 6 per cent per $1,000	$ 60.00
Depreciation at 10 per cent	100.00
Cost of handling at 25c (3,000,000)	750.00
Interest on $20,000 at 6 per cent for three months	400.00
Profit at $1.00 per M on 2,000 M additional output	2000.00
	$3,310.00
	1,824.00
	$1,496.00

It is thus seen that a plant making only 20,000 per day could afford to borrow the necessary capital to invest in a dryer and at the end of the year with waste heat show a profit of $1,496.

The best dryer to install is a question which should always be determined by local conditions. All other things being equal, however, the use of waste heat from the cooling kilns should be given preference as the most easily controlled, the most efficient and the most economical.

In my judgment a steam dryer of any form should be the last considered and only used in mild climates. The expense and annoyance of bursted pipes from frost or neglect and trouble from other sources become a burden and from the very fact that the construction of this class of dryer can be made cheap as compared with the waste heat. Even as constructed the results obtained are fairly good on the surface for a few months, but later an examination of fuel bills and repair costs will show that it is only another of those very pretty deceptions upon which the infant brick maker cuts his eye teeth.

Two factors are necessary to the successful drying of brick, these are heat and circulation; heat to evaporate the water in the clay and circulation to carry away the vapor formed. Neither one will succeed without the other, and to obtain the best results both must be under control.

Cheap construction never pays, and among the worst places to use cheap construction is the dryer. Very soon tracks begin to settle or spread, cars are wrecked, and tempers ruined by the necessity of unloading a car of ware in a temperature of 150 degrees F.

From an investment point of view the construction should be the best, and absolutely fireproof. There should never be a stick of wood used. The rail should be at least 20 pounds to the yard, and should be on iron ties. The floor should be of concrete and the roof concrete provided with expansion joints and covered with some roofing material or with a water proofed coat. A concrete slab is easier to apply than book tile, brick platten or clay. Cars should be reasonably heavy. When axles less than 1¾ inches or wheels weighing less than 25 pounds are used they are shortly found in the scrap heap. A good serviceable dryer car will weigh between five and six hundred pounds. Dryer equipment throughout like any other equipment from the standpoint of investment cannot be too good.

And in conclusion I will say that any investment which decreases loss from damaged ware, eliminates the effects of bad weather, lessens the cost of handling, increases possible running time, holds the employees together, and increases the production of a plant, and yet does not materially increase the running expenses, is a good investment.

GAS BELT BRICK COMPANY ONE OF LARGEST IN WEST.

The Gas Belt Brick company, incorporated a few days ago with $750,000 capital stock, will soon be comfortably located in its quarters on the third floor of the Columbian building, Topeka, Kansas. This will be one of the largest brick, tile and hollow ware concerns in the country and one of the two largest west of the Mississippi river. The company is incorporated for $750,000 and everything considered, has the brightest of prospects.

One of the valuable assets of the company is a large number of cheap long time gas leases. On this item alone the company expects to save thousands of dollars which usually go into fuel in the making of brick and other similar wares. One of the five large plants is now in course of construction at Henrietta, Okla., and four others are to be constructed as rapidly as possible. All five of the plants will be located in Oklahoma because of the differential freight rates now in effect there. The five plants now planned will have a capacity of half a million brick per day, or the equivalent of this amount in other shale products.

In the Oklahoma gas fields, which are acknowledged to be the greatest in the world, gas which would amount to 500,000,000 barrels daily is not bottled up. The supply of gas is practically unlimited, as this production could be multiplied by ten with very little effort. And beside the gas, which is the cheapest of fuel, there is also in Oklahoma the two other fuels, coal and oil. At the Henrietta plant all three of the fuels abound. The next two plants to be constructed will be at Pawhuska and Tulsa. The exact location of the remaining two plants has not been definitely decided upon.

Another reason for having the plants located in Oklahoma is that the new state is now engaged in the construction of many buildings, both public and private, and brick for the last year has been worth $1 per thousand more there than it is in Kansas for this reason. With what the company will save on fuel and labor the profits will be exceedingly large.

The possibilities of such a business as the Gas Belt Brick company has been under consideration by the men who are interested in the company for more than a year. They are practical brick men and business men. By their plan it is believed that ninety per cent of the cost of brick and similar productions can be saved. This means that they will make brick at about one-tenth of the cost of making it in the ordinary brick yard, and the profits to the stockholders will be correspondingly large. And there are few brick plants, now, that, properly managed, are not paying from 25 to 70 per cent on the investment.

As an indication of the worth of brick securities, the panic of two years ago had the effect of lowering the prices of structural steel and cement securities, but brick securities remained stationary. As to the efficiency of brick, the fire and earthquake at Frisco a few years ago demonstrated beyond a doubt that neither stone nor cement were as impervious to fire and water as the brick.

The market for the products of the new concern, which will include all gas burned shale made products, will be such that it will be but a question of how rapidly the company's wares can be made and shipped. It will be the market of the west, there being only one other such concern in the west. Because of the low cost of production longer shipments can be made than can be made by most companies, and still the prevailing prices in the various localities can be met, and with a good profit to the concern.

Bonds running for fifteen years unless recalled sooner under the terms of the contract, will be sold by the company. These bonds are sold for the purpose of raising money to build the five gigantic plants contemplated by the company. The bonds will pay 7 per cent interest beside giving the owner a bonus of one-half the face value of the bonds in the stock of the company. As soon as the first plant, now under construction, is completed and operation begins, dividends will be paid out of the profits.

The Gas Belt Brick company has a neatly prepared prospectus which will be furnished upon application, and which tells more definitely of the plans and assets of the company. Letters should be addressed to the companay at Room 31, Columbian building.

The officers are: President, C. J. Price, Topeka; vice-president, E. G. Potter, Minneapolis, Minn.; secretary, W. S. Cochrane, Chanute; treasurer, F. E. Blaise, Topeka; attorney, John J. Jones, Chanute; trustee for bondholders, John R. Mulvane, Topeka.

TWO SPOKANE COMPANIES CONSOLIDATE.

Spokane, Wash., August 13.—Washington Brick, Lime and Manufacturing company and the Spokane Sewer Pipe company have consolidated their interests in a $2,000,000 corporation, with Joseph H. Spear, head of the first named concern as president and manager. The new company will take over all the plants and other property of the first named company, also carry out the plans of the sewer pipe company to erect a $300,000 plant adjoining the east city limits of Spokane. Identified with the corporation are the following: William M. Colby of Mason City, Iowa, vice president; S. J. Boal of Minneapolis, secretary; T. Ed. Redman of Jackson, Mich., treasurer; L. A. Spear, director.

The sewer pipe plant, occupying part of 15 acres, will have a capacity of 1,500 carloads a year and employ 150 men. The large clay deposits which the company owned at Mica, Wash., become the property of the consolidated companies, and will be used in the manufacture of the sewer pipe and clay products in the new plant.

The Washington Brick, Lime and Manufacturing company's plants and office building and ground in Spokane are included in the consolidation. The clay products plant is located at Clayton, Wash., and has a capacity of 80,000 brick a day. It is the largest terra cotta plant west of Chicago. The town site, company dwellings and stores go in with the deal.

The Freeman brick plant, at Freeman, Wash., has a capacity of 120,000 brick a day, and the lime plant at Bay View, Idaho, has a capacity of 500 barrels a day. Four thousand acres of land is included in the consolidation, belonging to Mr. Spear's company. The three plants employ 250 men.

"We came to the northwest because we consider this the best field for sewer pipe and building materials in the United States," said T. Ed. Redman, treasurer of the new company. "Cities in the northwest are doubling in population every 10 years, besides new ones are springing up. There is a tremendous amount of building and extension of sewerage systems. Add to this that the clay deposits we have are the equal, if not the superior, of any in the United States, and we have ideal conditions for the kind of factory we are establishing and operating."

The Washington Brick, Lime and Manufacturing company was established in 1889, the result of a partnership in 1888 by J. H. Spear and H. N. Belt under the name of Spear & Belt. In the following year Mr. Spear acquired Mr. Belt's interests and changed the name of the company to the Washington Brick, Lime and Manufacturing company. Mr. Spear owned practically all of the stock up to the time of the consolidation with the Spokane Sewer Pipe company.

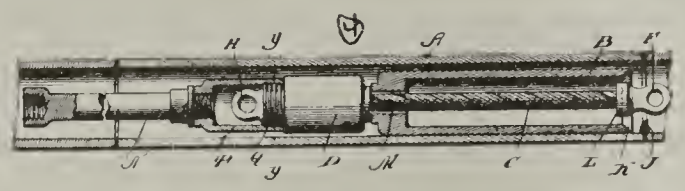
The plant at Clayton was built 10 years ago to manufacture the brick. It now has five times the capacity of the original plant. At the St. Louis exposition in 1904 products from this plant took second prize for range of production and quality of clay. At the Portland exposition products from the plant took first prize.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

920,544. Device for Removing Obstructions in Conduits. Thomas J. Cope, Philadelphia, Pa. Filed Feb. 5, 1908. Serial No. 414,390.

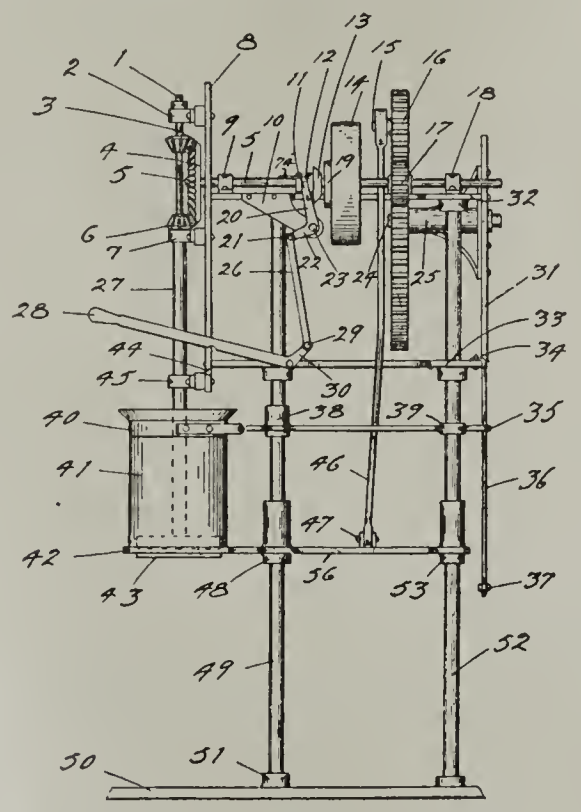
A device for removing an obstruction in the interior of a conduit, comprising a cutting member of less cross area than the conduit and adapted to have its cutting edge engage an obstruction, and means embodying a flexible member movable through said cutting member, and a device carried by said flexible means for forcibly striking the cutting member to drive its edge against and through said obstruction.



A device for removing an obstruction in the interior of a conduit, consisting of a cutting member of less cross area than the interior of the conduit, flexible means movable through said cutter, and a ram connected with said flexible means and provided with means actuating it in one direction for forcing the cutting edge of said cutting member against the obstruction.

921,142. Tile-Machine. William W. Myers and Jesse R. Royer, Janesville, Iowa. Filed Sept. 26, 1908. Serial No. 454,873.

In a tile machine, in combination, a mold-casing, concentric shaft oppositely rotatable in said casing, a core secured on each shaft and located one above the other, and eccentrically adjustable former-plates secured to each core, said cores and attached plates working within said casing and spaced apart therefrom.



In a tile machine, in combination, a cold-casing, oppositely-rotatable shafts in said casing, a core secured to each shaft, one being located above the other, former-plates detachably secured about the outer periphery of each core, each of said plates being both radially and eccentrically adjustable from the axis of its core, said cores and attached plates working within and spaced away from said mold-casing.

921,879. Brick-Glazing Compound. Henry Ohlsen and John Ohlsen, Loup City, Nebr. Filed Feb. 17, 1908. Serial No. 416,383.

A glazing composition comprising lead pigment mixed with muddy clay water and an alcoholic liquor.

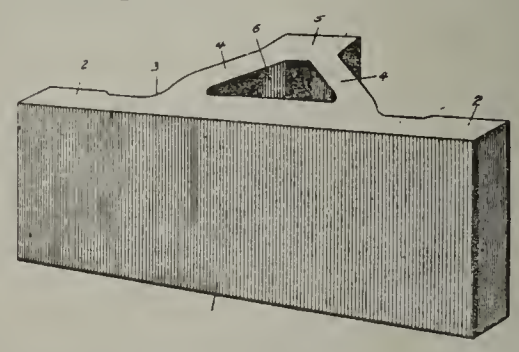
A glazing composition comprising lead pigment mixed with clay water and an alcoholic liquor, and a coloring ingredient commingled therewith.

A glazing composition composed of one part lead pigment, one part brandy and one part muddy clay water.

A glazing composition comprising one part lead pigment, one part muddy clay water, one part blue vitriol water, one part air-slaked lime and one part alcoholic liquor.

922,594. Building-Block. Roy E. Keagle, Lodi, Cal. Filed Feb. 15, 1907. Serial No. 357,449.

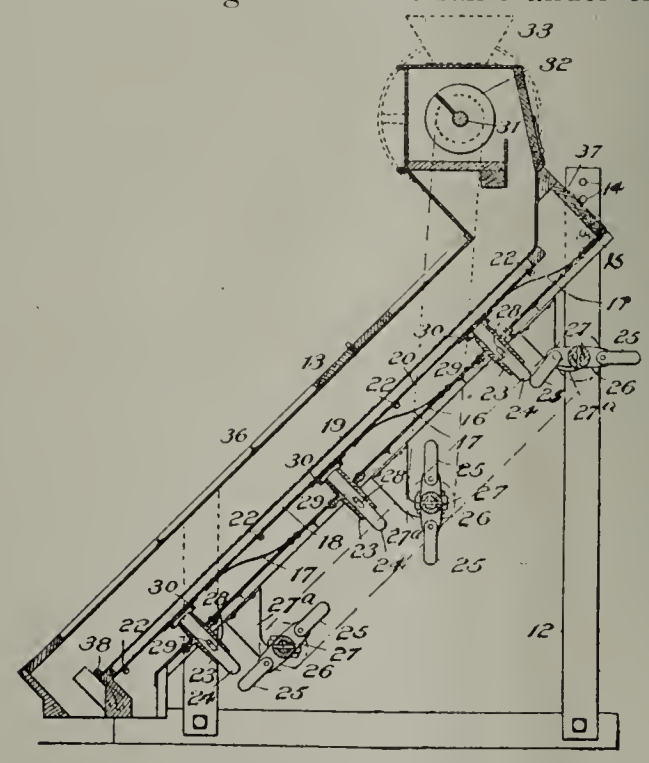
A building block comprising a block proper having end projections extending vartically from top to bottom of the



inner face of said block, a center projection on said block proper, such center projection being in substantial alinement with said end projections, obliquely projecting arms extending outward from said center projection and forming an intermediate air space, and a tying tongue projecting outward from the outer ends of such obliquely extending arms.

923,108. Vibrating Screen or Separator. Willard J. Bell, Newaygo, Mich., and Thomas L. Sturtevant, Quincy, and Thomas J. Sturtevant, Wellesley, Mass.; said T. L. and T. J. Sturtevant assignors to said Bell. Filed Oct 4, 1907. Serial No. 395,935.

The combination with a wire cloth screen, of a frame on which said screen is mounted, means comprising stretching springs mounted on the said frame, acting on said wire cloth screen and serving to hold the same under elastic tension in said frame and relative to the bars thereof, means for imparting percussive vibrating movements to said screen, and protecting means for preventing the screen surface from being injured by the percussive mechanism.



The combination with an inclined, spring-supported, wire cloth screen, of mechanism arranged below the same and serving to impart percussive vibrating movements thereto, a frame on which said screen is mounted, and one or more stretching springs acting on the said wire cloth screen and serving to hold the same under elastic tension relative to the bars of said frame.

PACIFIC COAST NEWS ITEMS.

As the summer advances building operations in San Francisco continue to grow in volume until now they are larger than they have been any time this season and are considerably ahead of the record established last year. While there are no very large contracts to be noted the great number of medium sized ones amply make up the deficiency. It is noteworthy that the character of construction this season is of a high average, and that the buildings that are going up, both in the city and in the suburban towns, are less and less inclined to be along the cheap order. This is in part a natural result for it is noticeable that the better buildings that cost the most, and command the highest rent are the structures that do not lack for tenants.

From the building trades comes the news that there are fewer members now lacking employment than has been the case in the past two years and conditions are reported as being favorable for a splendid fall season. Conditions generally are satisfactory and with plenty of materials of all kinds on hand building operations are not being hampered from the lack of speedy delivery as was the case during the great rush of building. Pressed brick and terra cotta work seems to be coming more and more into favor even where concrete is the main material used. There is less cement now being used than has been the case at any time since the fire, due largely to the fact that so many of the buildings now being erected here are of class "C" construction and builders have not looked kindly upon its use for buildings of this class.

The announcement is made that within a short time work will be commenced upon the erection of the Examiner building at Third and Market streets and this will be one of the largest undertakings in recent months. This building will be the tallest in the city and brick and tile will enter largely into its construction. Another building where Mission tiling will play a prominent part in the construction is the Mission Savings Bank at Sixteenth and Valencia streets.

There is but very little old brick now being offered in this market, the largest lot being that taken from the old city hall. The task of razing this structure has been practically completed but there is still considerable brick to be cleaned and placed in a salable condition. No decision has been reached in regard to a new location for the city hall and as it is possible that the old site will be used no attempts have been made to remove any of the brick foundation work. The common brick market is not in as satisfactory a shape as is the pressed and fancy brick and terra cotta market but prices are on a firm footing again and no reductions are anticipated in the near future. A number of plants in the vicinity of San Francisco are not being operated this summer on account of the over-production that threatens the market and a number of others are making preparations to close down much earlier in the fall than they ordinarily do. The demand for vitrified brick is showing an improvement of late due to the activities in sewer construction, and another large contract totalling a half million dollars has just been let by the city.

W. McKenzie of Alta, Cal., has just completed a transfer of his ranch properties in that vicinity to a company of Eastern capitalists who plan to establish a plant for the manufacture of fire brick. A large bed of clay lies on the ranch near the Little Bear River and this also carries quite a quantity of gold which will be extracted before producing the brick. A sawmill has just been set up on the property to furnish the lumber needed for commencing operations. Besides manufacturing brick it is the intention to ship large quantities of clay in the crude state to be used elsewhere for manufacturing purposes.

The Mount Shasta Volcanic Tile & Cement Co. of Yreka, Cal., has commenced operations and the plant at Igerna is now turning out brick on a limited scale. One brick machine is now in operation with a capacity of 12,000 brick a day while three tile machines are busy. Others will be added at once as the superior product of the plant insures a heavy demand for the goods. The quarry yields a volcanic rock, a coarse gravel, a lighter gravel, a fine dust, hard to distinguish from pure cement, and a volcanic sand that has a strong affinity for water and crystallizes rapidly.

The King City Brick and Enamel Works of King City, Cal., is preparing to open a brick plant at that place soon. This company, which we recently organized, is composed of A. E. Reynolds, president; Wm. Casey, vice president; F. G. Vivian, secretary; J. H. McDougall, treasurer; J. W. Range, general manager, and J. H. Smith, consulting engineer. Preparations are now being made for breaking ground for the factory.

The terra cotta plant of Gladding, McBean & Co. is running on full time and a number of contracts have been secured of late for work in this city. The new ten story building to be erected by the White Investment Company at California and Battery streets will be faced with their product. Work on the facing material for the Columbia theatre building is progressing very rapidly and this material will be placed in position within a very short time as the building is nearing completion. This work is regarded as being the most important from an artistic standpoint that has been attempted in the new San Francisco and is expected to call increased attention to terra cotta as an artistic facing material.

A new brick company has just been formed at Tacoma, Wash., by C. C. Adams, H. B. Scovell, J. B. Champlain and J. Moser. The new firm will be known as the Red Rock Brick Company and controls clay deposits near Tacoma.

Another Northwest enterprise that is assuming definite shape is the one being fostered by L. S. Thomas at Rainier, Ore. A fine clay deposit has been located there and a company is being formed for the purpose of installing a plant.

A brick plant will shortly be established at Holtville, Cal., by J. C. Schenck.

The Pyrmont Brick Company of Oakland, Cal., has been incorporated at Auburn with a capital stock of $400,000.

The new machinery of the San Luis Brick Company has been received at San Luis, Obispo, Cal., and has been installed. Work has been commenced and a large run will be made before the winter season sets in.

GOVERNMENT REPORTS ON THE FIRE RESISTANCE OF BUILDING MATERIALS.

The United States geological survey has issued a bulletin recording the results of tests made by its technological branch of the fire-resistive qualities of various building materials. The tests were made at the underwriters' laboratories in Chicago, the materials being subjected to the direct application of heat for two hours, then being exposed to a stream of water.

The report stated that the conditions of the tests were unusually severe and that none of the materials passed perfectly, the temperature used being greater than that expected in an ordinary fire. The fact brought out most clearly is the low heat transmission rate of Portland cement mortars and concretes, this being one of the desirable qualities in materials intended for fireproofing purposes.

Brick sustained the tests better than the other materials, 50 per cent of the new bricks being split while 60 to 70 per cent of the old bricks were not damaged, the hydraulic pressed brick standing the tests better than the sand-lime brick.

The various natural building stones tested were so seriously damaged that no comparison is made among them. The results on hollow concrete blocks showed that the strength of the webs is usually insufficient to resist the stresses set up in such tests, as the rapidly rising temperature and the subsequent quenching caused the webs to split.

CLAY RECORD.

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CLAY RECORD PUBLISHING COMPANY

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"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

An ounce of jolly goes farther than a ton of advice.

A soft answer often may start good luck your way.

It takes a hundred cents to make a dollar, but it takes more than a dollar's worth of sense to make a man.

You may have a right to your own sorrows, but you have no right to throw their shadows in another's way.

Many will tell you that it is out of date to advertise anything as the "best." Yet when you have the best and you know by all signs and reasons it is, it seems further out of date not to say so.

This is true. The man that has been taking morphine for ten years can't stop it off in a day or a week, but he can begin to reduce the doses. The same with the man who does not advertise. He can begin with small doses and work up to a profitable business.

The advertising in the Clay Record is inserted in the belief that all statements made therein may be implicitly relied upon. We therefore commend to our readers as entitled to their special consideration and patronage, the firms whose business advertisements are found in these pages.

ALL REPORTS ENCOURAGING.

R. G. Dun & Co.'s Weekly Review of Trade says:

"All branches of business affected by the new tariff law are rapidly adjusting themselves to the amended schedules and the ending of the period of uncertainty as to the rates of duty to be imposed has already had the effect of stimulating trade. Reports from all the important cities in all the leading trades are most encouraging.

"In the iron and steel trade each week serves to bring an increased volume of business to the mills, and labor is in greater request. Advices from the principal industrial centers indicate that working forces are being enlarged whenever possible, and retail trade shows more activity as pay rolls expand. Conditions in the steel rail division steadily improve, the railroads buying with increased freedom. Liberal orders are received for cars, but structural contracts are not significant, although considerable business for moderate lots continues to be placed."

GENERAL TRADE GAINING.

Bradstreet's says:

"Improvement is more manifest in general trade and industry this week, but there is still present the feeling of conservatism hitherto noted, which makes for small and frequent rather than heavy individual sales. Developments have been largely favorable, chief among these the increased arrivals of buyers in most markets, a greater disposition to take hold for fall and spring delivery, a favorable government crop report, the continuance of the marked strength in security markets, the growing firmness of the time money market.

"Trade with first hands in dry goods is fair, while jobbing trade expands most rapidly, and retail trade is now engaged in digesting the remnants of summer business. The railroad situation is improving and idle cars are disappearing on the western lines as the winter wheat movement enlarges. Industries are active, iron and steel leading, with railroads reported buying freely of rails, cars, and locomotives.

"Business failures in the United States for the week ending with August 12 were 219, against 184 last week, 249 in the like week of 1908, 146 in 1907, 143 in 1906, and 147 in 1905."

BRICK FOR COUNTRY ROADS INSTEAD OF MACADAM.

In Allegheny county, Pa., notes the New Castle News, there will be no more country roads paved with other than brick.

The hundreds of thousands spent in macadam highways have taught the officials at last that the only satisfactory improvement is to be secured through the use of brick.

The same decision is announced in Mahoning county, Ohio, where the county commissioners, in session at Youngstown, decided to use brick for the paving of the new roads planned for the southern part of the county. A brick roadway will be laid on one side of the highway, and the other will be reserved for a dirt roadway for summer use.

The cost of keeping up broken stone roads has proven so much greater than that of brick roads, that the slight additional cost of the latter can be undertaken with safety by the most economical.

OBITUARY.

Fred Kirsch, manager of the Paragould Brick Company at Paragould, Ark., and one of the best known citizens of that city, died at his home after a brief illness. He was formerly a resident of Belleville, Ill., where he was raised and was taken to that city for interment.

Fred W. Conradt, treasurer of the Great Western Pottery Co., Tiffin, Ohio and 50 years of age, dropped dead at his home on the evening of Aug. 13th, having just returned from the factory.

FIRE! FIRE!! FIRE!!!

Fire destroyed the plant of the Greathouse Brick & Tile Co. at Lewisport, Ky., causing a loss of over $5,000 on the machinery. D. B. Greathouse was the owner.

Fire destroyed the dry kilns and a tenement house of the Day & Harvey Brick & Lumber Co. at Independence, La. The loss was $2,500. No insurance.

A fire in the Scanlon Brick Co.'s plant at Crescent, N. Y., destroyed part of one of the kiln sheds and did other damage.

Fire at the plant of the Stevens Point (Wis.) Brick Co.'s plant, otherwise known as the Polish Brick Co., did $1,000 damages, fully covered by insurance.

The main building of the Hayes Run Fire Brick Co., at Hayes Run, near Lock Haven, Pa., was destroyed by fire, causing a loss of $75,000, $40,000 insurance. The plant will be rebuilt at once as it was being run night and day to fill its orders.

HAVERSTRAW RENEWS WAR ON BRICK PEOPLE.

The fight of the village of Haverstraw, N. Y., against J. Esler Eckerson, owner of the big brickyards there, has been renewed. One case against Eckerson, who was indicted in Rockland county, was tried here two years ago and Charles Morschauser was counsel for Eckerson. Eckerson was defeated, but he carried the case to the appellate division of the supreme court and had the judgment reversed. Justice Morschauser also figured in the case on motions brought before him. The conditions now are as they were before the brick people resumed operations.

The lines upon which excavations may be made with safety to contiguous property were laid down by Judge Tompkins. in the supreme court, when he granted an injunction to the Village of Haverstraw, restraining J. Esler Eckerson and others from making further excavations in Rockland street in the vicinity of Jefferson street, the scene of the great landslide of 1906.

In the last case, as in the old one, the property owners protested, on the ground that their homes were menaced by danger of landslides. Judge Tompkins, after hearing the testimony of experts, held that the safety and preservation of the streets affected required a slope in clay of four feet horizontal to one foot perpendicular, while in sand a slope of two and one-half feet horizontal to one foot perpendicular was necessary. As the excavations already made exceeded the limits allowed by this decision, a permanent injunction was granted.

The court also ordered the defendants to fill in and restore the necessary support of Rockland and Jefferson streets at their own cost.

ACCIDENTS, DAMAGES, AND LOSSES

Elliott Schall of Templeton, Pa., died of injuries received by a cave-in of the clay mine at the Harbison-Walker Brick Co. plant.

The Nowata (Okla.) Brick Works was bought at Sheriff Sale by John B. Pollard for $6,100. The company will be reorganized.

Charles Conner lost one of his eyes by failing to go fast enough away from a shot at the mine of the Diamond Brick Co., at Oak Hill, Ohio.

Virgil Thursten was badly injured at the Southwestern Brick Co.'s plant at Cherryvale, Kansas. His nose was broken and his scalp cut.

Stephen A. Gilmore, proprietor of the brickyard at Marlboro road at Westboro, Mass., has failed. His liabilities are $2,675, assets $1,277.

Mr. A. P. Wood and Mrs. C. S. Wood have brought suit against the Palmer Brick Co., Atlanta, Ga., for $8,000, claiming it is due on a lease on lands held by the brick company.

Fred Swanson, an employee of the Purrington Paving Brick Co., Galesburg, Ill., got his arm caught in a belt and was dragged between the belt and a pulley and badly injured.

The Wyoming (Pa.) Brick Mfg. Co. asks $50,000 damages from the Temple Iron Co. and the Mt. Lookout Coal Co. for their directing a water course so it overflowed their property.

Wilber F. Allen has been appointed receiver for the Chanute (Kansas) Cement & Clay Products Co., on application of E. E. Donnely, a Chanute contractor, who has claims of $4039.71.

Sam Williams, a convict, is sueing the Arkansas Brick and Mfg. Co., Little Rock, Ark., for $12,500 damages for the loss of one of his arms when he was oiling the company's machinery when he was in prison.

ILLINOIS LEADS THE STATES IN COMMON BRICK.

The United States geological survey has just published a large chart showing the statistics of the clay-making industries in 1908 by states and products, with comparative totals for 1907. This chart shows that the clay products of the United States in 1908 were valued at $133,197,762, compared with $158,942,369 in 1907, a decrease of about one-sixth. Every state and territory except Alaska is represented in this total, a fact which shows the widespread character of the clay-working industries.

Ohio is the leading clay-working state, reporting products worth $26,622,490, or 19.99 per cent of the total. Pennsylvania, New Jersey, Illinois, New York, Indiana, Missouri, California, Iowa, and West Virginia are the next largest producing states, in the order named.

Every state reported common brick, the total quantity being 7,811,046,000, valued at $44,765,614; this represents over one-third of the value of all clay products. Illinois is the leading producer of common brick, reporting 1,119,224,000, valued at $4,834,652, or $4.32 per thousand. New York is the second in quantity but first in value, the figures being 1,055,006,000, valued at $5,066,084, or $4.80 per thousand. The average value per thousand ranged from $3.97 in Kansas to $10.33 in Wyoming, with a general average of $5.73.

Drain tile reported a gain in 1908, the increase being from $6,864,162 in 1907 to $8,661,476 in 1908, or 26.18 per cent. This product finds its largest use in the middle west—Iowa, Indiana, Ohio, Illinois and Michigan reporting 89.84 per cent of the total.

TESTS FAVOR USE OF SOLID CLAY BRICK FOR WALLS.

The tests on the fire-resistive properties of various building materials made by the United States Geological Survey are only a beginning of the extensive work projected by that branch of the government, but, incomplete though they are, they demonstrate some of the necessary qualifications of the material which will best stand up against a fierce and prolonged fire, says Engineering News. The conditions of heat and quenching in the tests are much more severe than in the ordinary conflagration, but the experience of a few large fires has shown that they are not too severe for what a good building material should stand. In the Parker building fire in New York, it will be remembered, the molten metal found showed a temperature close to 2,000 deg. F. in places, which for the short time it probably raged is certainly equaled by the continued 1,700 deg. F. of the tests.

Aside from the surface spalling which can hardly be prevented and which causes no permanent defect to the structure of a building, it is evident from the tests that the principal danger to be expected from a fire is the failure of the structure of the material from expansion under heat and the subsequent contraction under sudden quenching. This failure is permanent and not only causes a total loss of the material itself but, when that material is used as a curtain wall as most fire-resistive stones, tiles and concretes are, its failure means the destruction by fire or water of the interior of the building. The low coefficient of expansion and the low coefficient of heat conduction which generally go together are then the desirable qualities in a fire-resistive material.

Briefly, the results from the tests are as follows: All of the material showed serious injury on the fact exposed to the fire and quenching; all of the cellular blocks with thin webs and facing, both in concrete and in tile, cracked across the thin webs; all of the artificially made solid blocks, either concrete or brick, stood up very well under the severe conditions; all of the natural stone block cracked and crumbled and practically failed in toto.

These results can be easily explained. A building block or unit to be reasonably safe under long continued fire must have two properties: a low coefficient of expansion in the material and a sufficient area to resist the stresses of expansion. Lacking either of the two it will fail. Clay and concrete both have low coefficients of expansion and are poor conductors of heat, so in the tests in the solid blocks, either concrete beams or clay brick with a large area transverse to the heated plane, the only damage done was on that plane where the high temperature caused a surface expansion resulting in spalling. On the contrary, when either material was made up in cellular blocks the small cross-sections of the webs and faces were not sufficient to resist even the low expansion, and the blocks either cracked or fell apart.

The natural stone has a high heat conductivity. All of the temperature curves show that the backs of the stone walls were much hotter than in any of the other materials. With this high conductivity there was also a high coefficient of expansion with the result that the internal stresses in the natural stone blocks were much greater than even the large area could resist, and they cracked and crumbled.

Unfortunately, this does not solve the fireproofing problem. Fireproofing means generally the protection of an otherwise non-fire resistant material; this protection must necessarily be light and thin and therefore, regardless of its nature, subject to more danger through expansion than if it were thick. The problem, therefore, is to decide upon the proper thickness so that the area is just great enough to resist the expansion, and this the limited number of tests have not solved. The experiments have shown, however, that solid clay brick make good curtain walls and that hollow tile or concrete block are dangerous articles to submit to the intense heat of a severe conflagration.

NEW YORK MAYOR ORDERS THE TESTING OF HOLLOW TILE AS WELL AS CINDER CEMENT

The city of New York, through Nelson P. Lewis, chief engineer of the Board of Estimate and Apportionment, will make a test, it was learned, not only of cinder concrete but of other fireproofing materials as well. This information came out, following the return of Mayor McClellan to the Adirondacks to take up his vacation where he laid it down to consider the building code.

When the Mayor vetoed the code he suggested that as cinder concrete seemed the principal bone of contention between the opposing interests the city conduct a test to see just what degree of heat various mixtures of cinder concrete would stand. After Mr. Lewis had a long conference with the Mayor on the subject, they decided that so long as it would be necessary for the city to go to a considerable expense to prepare the proper plant for testing cinder concrete it would be advisable to use it at the same time in giving a thorough try-out to other fireproofing materials.

As a result of this decision tests will be made of hollow tile, reinforced concrete and other kinds of fireproofing, as well as of cinder concrete. Not only will their ability to withstand fire be tested, but their tensile strength as well will be determined. The Mayor is anxious to have these tests as nearly conclusive as it is possible to make them, and to that end has instructed Mr. Lewis to spare no expense and leave nothing undone which would be calculated to furnish data that in the future might be needed.

Mr. Lewis started on his vacation some time ago, but returned to talk with the Mayor. He hopes to make all the arrangements for the tests before he leaves the city again. The place of making the tests has not been determined on, but it has been suggested that they might be held under the Manhattan approach to the Williamsburg bridge.

After the arches and other forms are constructed of the various materials they will be allowed to dry and settle thoroughly for a period of thirty or forty days. So it will be well toward the latter part of September before the tests can be completed.

When Mayor McClellan started on his vacation he had planned to end it on August 2, at the end of the thirty-day period beyond which absence no Mayor may go without running the risk of having his appointees removed and others placed in their jobs. There is an unwritten law that the Mayor shall not remain away from the city for more than thirty days, except when he may be out of the country. Now, however, the Mayor has another thirty-day period before him, and it is expected that he will take advantage of it.

HUDSON RIVER BRICK MAKERS STRIKE.

Coxsackie, N. Y., Aug. 14. Six hundred brick laborers are on a strike this morning at the Empire Brick Supply company's plant at Empire opposite Coxsackie. The company recently built a fence around their plant, refusing all wagons peddling meats, groceries, dry goods and the like on their property. The men felt that they had a right to buy where they please whether at the company's stores or other stores. The men will not tolerate the fence building and as a result struck for an increase in wages and the right to purchase at other places than the company's stores. No trouble or violence has yet broken out.

TILE VS. CONCRETE BUILDINGS IN NEW YORK

The recent discussion of New York's proposed Building Code has brought to light some interesting facts. It was formally stated to the Mayor, who presided at those meetings, by one of the leading concrete experts, that fully 60 per cent of all the fireproofing work in New York was done by one of the several tile companies there, the National Fireproofing Company, while sixteen concrete companies had to scramble for that part of the remaining 40 per cent that is done by concrete.

Cinder concrete is permitted in New York, the cheapest known concrete made, and our concrete contemporaries would have us believe that everything or nearly everything fireproof built there was concrete, and concrete advertisements attractively announce that any concrete is as good as tile, and cinder concrete is infinitely cheaper than the latter. Yet, on the stand, they have to admit that not all but just one of the tile companies does 60 per cent of all the fireproofing in the city.

This certainly would indicate that the building public of New York is discriminating, wants only the best and safest material and is willing, in at least 60 per cent of its work, to pay a little more to secure the very best.

More than that, tile has been the acknowledged standard fireproofing since 1874; concrete has not yet passed the experimental stage in spite of the millions spent in advertising and exploiting it, it can hardly be termed a dangerous competitor of tile-fireproofing for of the existing "fireproof" buildings the country over fully 94 per cent are tile.

It was further shown at these hearings that the National Fireproofing Company maintains a great testing laboratory in Chicago where its work, (as well as every system of concrete construction) is carefully and impartially tried by skilled engineers, its object is to constantly better its system and make it less costly to the users.

UNION MEN PROTEST AGAINST PRISON MADE BRICK.

Brick making at the Minneapolis workhouse is not only a necessity, but a practical proposition by which Minneapolis can save money, according to the statement made before the board of charities and corrections by Superintendent Frank McDonald of the workhouse.

Upon his recommendation the board will ask the city council to instruct the park commission and other departments to use the city brick in construction work wherever possible. It is recommended that if the teamsters' union refuses to haul the brick the city should use its own teams and men.

The question was brought up following objections raised by members of the teamsters' union, who declared that they would refuse to haul prison-made brick.

"I believe that there is no reason for objection on the part of the teamsters," declared Mr. McDonald. "We certainly must put the workhouse prisoners at some kind of work and brick making seems the most practical. Our brick is made from clay owned by the city and the brick itself is owned by the city. There is no reason why we cannot use it in the construction of our buildings.

"The teamsters are the only people complaining. The bricklayers have agreed to lay the brick and think it perfectly proper for the city to use its brick on its own buildings."

A statement of the facts is being prepared by the board, which will be submitted to the council.

BLACK HAWK WILL ENLARGE THEIR PLANT

The Black Hawk Clay Manufacturing Co., Rock Island, Ill., makes the announcement that it will install during the coming fall and winter an addition to its present plant at Sears of 40,000 brick a day. The new addition will be what is known as a stiff mud plant. The new plant will cost in the neighborhood of $30,000 and it will be used for the manufacture of hollow blocks, building blocks and vitrified brick. It will necessitate the purchase of additional crushers and pug mills, together with buildings, dryers and kilns for the handling of the clay and brick. Additional switches will also be asked of the Rock Island road in connection with the new plant.

The new plant will be located on the west side of the Milan road just north of the present plant and between that and the boarding house. Manager Engelbrecht when seen stated that the new plant would employ about 40 additional men, to the force now being employed by the company, and that it will mean almost a doubling of the present capacity of the plant.

The business of the Black Hawk Clay Manufacturing company is steadily increasing and the demand for the brick is coming in very rapidly. In two days orders for nearly a quarter of a million of brick were received, including those of a new high school at Ankney, Iowa, 60,000; a Catholic church at Jefferson, Iowa, 80,000; a college building at Minneapolis, 50,000; and a business block in Minneapolis, 28,000, making a total of 218,000.

GOVERNMENT OPENING OF IRRIGATED LANDS.

Arrangements have been completed for the opening of 70,000 acres of choice irrigated lands on the Valier (Mont.) tract, October 7th, 1909. The days set for registering claims are October 1st. 2nd, 4th, 5th, and 6th, Everything is being planned for handling the crowds comfortably and for conducting the drawing without delay or discomfort. This Carey segregation is to be thrown open to the public at reasonable terms. The price and terms set by the State Land Board is $40.50 per acre, including land and perpetual water rights which are the oldest and best established in the State. The first payment required is $3.50 per acre; fifteen years are allowed in which to complete the payments. The land will grow as good crops as the best $200 an acre soils of the corn belt without their uncertainty of seasons, and home-seekers will doubtless gobble up the 70,000 acres of irrigated land very quickly.

A CONTRACTOR SUES THE BRICKLAYERS' UNION.

Fort Smith, Ark.—J. B. Carbaugh, a brick manufacturer and general contractor, in a suit filed here, affirms that the stonemasons and the brickmasons have conspired to put him out of business. He recently secured a contract to erect a building costing $13,000 and was compelled to cancel the contract because of a refusal of the stonemasons and the bricklayers to work for him. He also alleges that he has been obliged to give up a number of other contracts for the same reason. His suit is against the officers of the stonemasons' and bricklayers' organization to recover damages in accordance with the profits he would have made had he been permitted to complete the contracts he was compelled to abandon. He further alleges that he is being boycotted because he will not permit the organizations named to control his business.

LARGE BRICK BUSINESS IN NEW JERSEY.

The New Jersey brick market continues to be remarkably active, with good contracts going ahead in Jersey City, Hoboken and Newark. This market is expected to increase, due to the building boom that is expected to follow the actual operation of the Hudson river tunnels, and it is said that some New York and the leading New Jersey architects have more work on hand than they can comfortably accommodate.

Most of this is in the nature of estimating on prospective structures in the cities named. Hackensack Valley manufacturers report big orders from local and metropolitan markets. Unprecedented activity is reported in the Passaic and Hackensack valleys, in factory, office building and considerable apartment house projects. A reliable authority states that there has been somewhat less activity in dwelling house construction in the extreme north section of New Jersey this year.

Of all the new business reported in New Jersey most of it is of a contract rather than of a speculative nature. If anything, there is an overproduction of dwelling houses in the suburbs, due in a measure to foresightedness of property owners in anticipating the probable rush of Manhattanites to the suburbs with the inauguration of easier transportation facilities between the larger North Jersey cities and Gotham. But experts agree that this surplus will rapidly be transformed into a deficit, and that there will be even a greater demand for apartment houses than heretofore. Therein is where brick manufacturers expect the present demand will continue.

ROOFING TILE COMPANY IS READY TO GET BUSY.

The New York Roofing Tile company has purchased from Richard F. Mueller the eighteen acres of land at Malden Station, near Saugerties, N. Y., adjoining the present holdings of the company on the west. This gives the company the sole ownership of the entire deposit of roofing tile clay, about forty acres.

Lucius H. Washburn of Albany, the president of the company, said:

"This is the first step toward the larger plant. Our engineers are at work on the plans and we expect to begin the actual work of construction in about three weeks. We will employ when in full operation about 150 and will make a complete line of natural color and glazed tile of various patterns and sizes, together with the necessary fittings.

"The new buildings will cover nearly two acres of land and will consist of plain and glazing kilns, dryers, machinery houses and engine house and will have a capacity of three million tiles a year."

KENTUCKY BRICK PLANT CHANGES HANDS.

A joint stock sompany, which will be known as the Barboursville (Ky.) Clay Manufacturing company, will shortly take over the plant of the Guyan Valley Brick company at Barboursville. The new company has been formed largely through the efforts of Rev. M. C. Johnson. The capital stock of the new company is $25,000, of which $15,000 is paid up. Practically all the stock has been sold and the new company will be organized within a few days. Most of the stock was taken up by residents of Barboursville and of Marion county.

The Guyan Valley Brick company was organized several years ago, a splendidly equipped plant was constructed and the concern prospered until the panic set in, since which time it has been operated only in a desultory manner.

The new company will take charge of the plant immediately, and after a thorough overhauling of the equipment, together with the installation of additional machinery of the latest pattern, expects to begin operations by September 15.

IMPORTANCE OF TESTING CLAY PRODUCTS EMPHASIZED BY U. S CERAMIC CHEMIST.

The importance of clay products as a structural material was emphasized in a recent address by A. V. Bleininger, United States ceramic chemist, says the current issue of the National Contractor and Builder. The government spends about $40,000,000 annually in construction work, and Congress has authorized the prosecution of testing work upon all building products made from clay used by the federal government.

It is intended that tests should be made of common and pressed brick, paving brick, hollow tiles and conduits, sewer pipe, fire proofing, terra cotta, enameled bricks and glazed tiles, floor and roofing tiles, fire brick and all other refractories, electric porcelain insulators and other structural goods submitted for this purpose by the construction bureaus of the government. A great number of problems relating to the testing of clay wares might be mentioned. What shall constitute the minimum crushing strength of a good, common brick? Relation between porosity and crushing strength. Relation between porosity and resistance to freezing. Relation between density and resistance to sudden heating. Crushing strength of fire brick at high temperatures. Heat conductivity of burnt clay wares. Can the present rattler test for paving brick be improved? Strength of hollow tile walls, arches and columns. Strength of terra cotta of various shapes. This list could be extended almost indefinitely.

BRICK FAMINE NOW IMMINENT AT DES MOINES.

Indications are that Des Moines, Iowa, brick plants will be unable to turn out enough common building brick to complete the extensive local improvements before winter. More than 20,000,000 brick are to be laid in Des Moines before the cold season arrives.

Two weeks ago contractors were forced to advertise in different newspapers throughout the middle west to secure a sufficient number of brickmasons to complete the improvements before winter. Seventy-five bricklayers have come into Des Moines since then and now a brick famine is predicted.

The shortage is on brick used to back up walls. The supply of finishing brick is unusually large and since a week ago none but common brick have been manufactured here. It is probable that brick will have to be imported in order to close the new buildings before snow flies.

POTTERY NEWS ITEMS.

The Star Pottery Works at Elmendorf, Texas, has increased its capital stock from $8,000 to $16,000 and will enlarge the business.

W. R. Williams, secretary of the Board of Trade at Grafton, W. Va., can be addressed regarding the organization of a two kiln clay working plant.

A stock company is being formed at Badger, Minn., to start a pottery factory. Gus Anderson has successfully burned a small kiln of ware made from local clays.

W. B. Jones has resigned as head of the decorating department of the Steubenville (Ohio) Pottery. He will go into business selling supplies to potteries and glass works.

The French China Co., Sebring, Ohio, is building two large additions to its pottery, one is 60 x 250 feet, and the other 15 x 100 feet. This is owing to the large increase in business.

The Imperial Porcelain Works, Mulberry St., New York, and Trenton, N. Y., was partly destroyed by fire, causing a loss of $50,000. Fully insured. The plant will be rebuilt at once on a larger scale. R. A. Duggan and B. F. Dinsmore are the owners.

SAND OR LIME BRICK OR BLOCK NEWS.

Godlieb Swerner, of Manitowoc, Wis., has started a new industry and is making brick of cinders.

The Mt. Shasta Volcanic Hollow Tile & Cement Co. has its plant at Igerna, Cal., in operation. Senator Weed is interested.

The Lake Superior Stone Brick Co., Calumet, Mich., have a crew of men operating a sand sucker. The factory is running at full force.

The Little Rock (Ark.) Granite Brick Co. will put more money into the business and make enlargements so as to keep the force steadily employed.

The Fremont (Neb.) Granite Brick Co. will soon commence the erection of a new building to replace the $20,000 structure recently destroyed by fire.

The Elsmore (Minn.) Cement & Tile Co. are putting up an addition to their present building so that they can add new machinery for making the large sized tile.

The Watertown (S. D.) Pressed Brick Co., makers of sand-lime brick have made a splendid growth. They are shipping a most excellent quality all over the state.

The Kentucky Unit Brick & Tile Co., Louisville, Ky., recently reorganized, will shortly begin the erection of a plant that will cost $100,000. New machinery has been purchased.

The plant of the Owensboro (Ky.) Sand-Lime Brick Co. was completely destroyed by fire, causing a loss of $35,000; insurance, $20,000. Oil exploded in the oil room, causing the fire.

The Oklahoma & Texas Cement Brick Co., Oklahoma City, Okla., has been incorporated with $50,000 capital stock. Directors are W. K. Hamilton, E. L. Benedict and W. G. Kenny, all of Oklahoma City.

D. R. Ingram, 413 Olive St., Kansas City, Mo., writes that they expect to have their sand-lime brick plant at Turner, Kansas, in operation by October. They have 10 acres of land and use the sand from the Kaw river.

The Architectural Stone Co., Jersey City, N. J., has been incorporated with $100,000 to manufacture brick and building material. Incorporators are W. J. Connor, T. F. Mulvaney and W. H. Saunders of Jersey City.

Henry Huennekes, who built one of the first sand-lime brick plants in America, has returned to this country and is now at the Hoffman House in New York. We understand that he is open for an engagement in this line of work.

The Enamel Brick & Concrete Co., New York Building, Seattle, Wash., have put their plant at Richmond Beach into operation. The capital stock of the company is $300,000. R. M. Moody is president and Henry Gay superintendent.

The Gary (Ind.) Granite Brick & Stone Co., a $75,000 corporation, is now running their plant at Highlands making 20,000 brick per day. J. K. Stinson, of Hammond, is president; W. C. Kunert, of Gary, vice-president; E. S. Emmerine, of Hammond, treasurer.

The Hydro-Silica Brick Co. has been organized at Tacoma, Wash., with $150,000 capital stock. They will use the "division method" of making sand-lime brick, using the sand from Maury Island, where the plant is to be built. W. M. Guiwitz and G. A. Misner are the eastern parties interested.

MISCELLANEOUS ITEMS.

The Harvey (Ia.) Brick and Tile Co. expect to add two new kilns to their plant this summer.

J. C. Hancock, Benson, Minn., is dismantling his brick works and will not operate same any more.

The Cimarron (N. M.) Brick & Tile Co. are working on their third kiln of brick, each kiln producing a better brick than was at first expected.

The Gettysburg (Pa.) Brick Plant of the Auburn Shale Brick Co. are getting ready to double their force on account of the boom in that community.

George French, the proprietor of the Polo (Ill.) Brick & Tile Works has just finished a 60,000 capacity brick kiln so as to better handle his increasing business.

The New York Roofing Tile Co. has purchased 18 acres of roofing tile clay adjoining their plant at Saugerties, N. Y., and will enlarge their plant to a very great extent.

The Logue Brick Works at Oscaloosa, Iowa, have a large force of workmen employed and orders are coming in so as to keep the plant running to its fullest capacity.

The brick manufacturers in the vicinity of Springfield, Mass., report a good season so far. Burnham Bros. at Montague City cannot fill all the orders they have received.

The Deming (N. M.) Brick & Building Co. has been incorporated with $25,000 capital stock. Directors are Edward F. Moran, Otto Lennold and Julius Rosch of Deming.

A stock company has been organized at Gorin, Mo., to manufacture fire brick and mine coal. They have a four foot vein of clay and two foot vein of coal at a depth of 170 feet.

The Sterling Brick Co. has been organized at Olean, N. Y., with $150,000 capital stock. The directors are Fred H. Enyder of Rochester, Henry Hasbrouck, H. S. Sartwell and C. R. Bard of Olean.

The Southern Clay Co., Birmingham, Ala., has just booked an order for 4,000,000 paving brick, which with other orders will keep the plant at Warrior running indifinitely. O. S. Adams is the general manager.

The Uvalda (Texas) Business Men's Club is very desirous of securing a brick works for Uvalda and will offer substantial inducements. There is an abundance of clay south of town. M. M. McFarland is president of the Club.

George Evans formerly of Hamilton, Ontario, has taken the management of the Birmingham (Mich.) Brick and Tile Co. works and is making satisfactory brick. He will move to Birmingham. The plant is being overhauled so as to get the best of results.

The Farmers' Co-operative Clay Co. has been incorporated at Augusta, Maine, with $400,000 capital stock. The president is J. H. Brown of Rockwell, Ia., E. G. Dunn, vice president, W. R. Fleming, secretary and George E. Hughes is treasurer; the office of the company is at Mason City, Iowa.

Haigh's New System of Continuous Kiln Arranged to Suit all Locations

These Kilns can be seen burning Roofing Tile, Drain Tile, Dry Pressed Facing, Fire, Paving and Common Building Brick

Points of Superiority: Cheapness in construction. Easy to understaud and operate. Perfectly free from any nuisance. Will save more than one-half of the fuel used on other Kilns. Specially adapted for Utilizing Waste Heat for Drying Purposes, and which is being done most successfully

Address, H. HAIGH, Catskill, N. Y.

The Mobile (Ala.) Portland Cement & Coal Co. will proceed with its plans to erect a cement plant at St. Stephens in the Warrior district.

F. X. Freyder of Iowa City, is interested in the Kalona (Ia.) Brick & Tile Co., which is making an investment of $50,000 in a new plant.

Employees of the Rawson (O.) Tile Company struck for 25 cents more daily wages, and their places were filled at once by other workmen.

F. W. Herron has been elected vice president of the Lehigh (Ia.) Clay Co. and it has been decided to rebuild the plant recently destroyed by fire.

The Hanreddy Brick Co., capital stock $10,000, has been incorporated in Chicago. Incorporators are Joseph Hanreddy, Otto E. Nickoff and Timothy J. Fell.

The Indiana Press Brick Co., Indianapolis, Ind., has been incorporated with $300,000 capital stock. Directors are John H. Radke, Emma Radke and Chas. Rulpinski.

C. E. Lockwood of Petersburg, Nebr., has traded a 5,400 acre ranch for the Minden (Nebr.) Brick Works and will operate same under the management of Hod Taylor.

The city of Newport, Ky., recently purchased a brick testing machine, as they were looking for the best they naturally would purchase one from the P. Hayden Sallery Hardware Co., of Columbus, Ohio.

The Jamestown (N. Y.) Shale Paving Brick Co. are making extensive changes to their plant and when completed will make 100,000 brick daily. The old kilns are being taken down to make room for new and improved kilns.

The Rose Brick Co. is spending $60,000 improving its Roseton, N. Y. brick works. Electric clay carriers doing away with the old dump cars will be installed as well as houses to accommodate the workmen are to be built.

The Brownwood (Tex.) Commercial Club are making an effort to locate a paving or face brick plant in that city. The local plant, making only common brick, has increased the capacity of its plant twice since it was built, two years ago. so as to keep up with the demand.

South Webster, O., is to have a new $500,000 fire brick plant to be built by Chicago and other capitalists, called the South Webster Clay Products Co. Incorporators are W. E. Tripp of South Webster, I. M. Appel, J. C. Bauer, A. F. Marting and attorney Frank B. Finney of Portsmouth, O.

Thomas Harney is superintendent of the work at the brick yard at Sinsinawa, Wis.

The Morton (Minn.) Brick & Tile Co. is contemplating extensive improvements in order to increase the capacity of the plant.

M. W. Russey is considering the organizing of a brick plant to use the shale found at Arkansas City, Kansas. He is now testing the shale for that purpose.

The Western Stoneware Co., Monmouth, Ill., will remodel plant No. 1 so as to put plant to work on a year's run. They have many orders for a special filter that they are turning out even shipping it to many foreign countries.

The Prewitt Brick Mfg. Co., Elgin, Texas, has been incorporated with $75,000, to make fine face brick, etc. The president of the company is Ira A. Prewitt, T. D. Prewitt is manager and J. B. Morrison is superintendent.

The plant of the Gadsden (Ala.) Brick Co. which has not been operated for a long time is to be placed into operation as soon as it can be put in readiness. The fact that this large plant is starting again is another indication of the revival of prosperity around Gadsden.

The Lexington (Tex.) Brick & Tile Co. has been organized with $75,000 capital stock, and the following are the board of directors: G. P. Dickson, R. F. McGinty, E. Zander, H. Englehart, Will Fricke, with G. P. Dickson president and R. F. McGinty secretary and treasurer. Stiff mud machinery has already been purchased.

Alliance, Ohio, is to mave another clay plant. The capital stock will be $300,000 and active work will begin on the construction of the plant on the Zurbrugg farm at once. The incorporators are F. A. Hoiles, W. H. Purcell, George Reeves, A. C. Reeves, Ross Rue, Fred Zurbrugg, E. E Dussill D. W. Crise and I. Koch.

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American Process Co.,

68 William St. NEW YORK CITY

George Barney has sold out his brick business at Leesville and will locate at Lake Charles, La.

P. V. Liggett, Thomas, Okla., has his brick plant in operation and is now turning out brick.

The Bloomsburg (Pa.) Brick and Concrete Co., with $10,000 capital stock has been incorporated.

R. M. Cleveland will establish a brick plant at Marietta, S. C., with a daily capacity of 35,000 brick.

Francis F. Greenwell has located a brick yard at Leonardtown, Md., and can furnish all grades of brick.

Work has been started in the Montello Brick Works, Reading, Pa. Everything has been overhauled for a good run.

The Elmore (Minn.) Tile Co. are building an addition to their plant so as to install additional machinery to make large tile.

John B. Pollard has bought the Nowata (Okla.) Brick Works and will reorganize and put the factory on a paying basis.

Grenola, Kansas, is to have a new brick works, using the shale recently discovered. The machinery is now on the ground.

The Edisto Kavlin Co. has been incorporated with $50,000 capital stock, by J. K. Gautt, T. R. Gautt, and J. C. Gautt, all of Steedman, S. C.

The Elliotts Knob Coal & Iron Co. propose to establish a paving brick plant at Buffalo Gap, Va., using the clay discovered on the Cinotti lands.

The Thornton Fire Brick Co., Grafton, W. Va., are in shape to bid on paving brick jobs that can be handled from there and are looking for orders.

The Portsmouth (Ohio) Paving Brick Co. are adding new kilns and putting in new machinery with a view of largely increasing the capacity of the works.

G. M. Boyd & Co., Knobnoster, Mo., has just completed two new kilns of 200,000 brick capacity and will soon start on more so as to keep up with the demand.

The Atlantic and Gulf Portland Cement Co. are pushing the completion of their plant at Ragland, Ala., so as to have same in operation by the first of November.

The Hyfire Brick Co. of Vallejo, Cal., has been incorporated with $100,000 capital stock by G. Abrahamson, E. E. Kemble and F. A. Alexander, all of Oakland.

The Wilpicoba Clay Works, at Ragland, Ala., have shut down their plant so as to make improvements to the extent of $40,000. A new continuous kiln will be built.

The Black Hawk Clay Mfg. Co., Rock Island, Ill., will enlarge their brick plant at Sears so as to make 200,000 additional brick a day. The addition will cost $30,000.

Groman Bros. of South Bethelem, Pa., have received a contract from the state for 6,000,000 brick to be used to build the State Hospital for the Insane at Rittersville.

William Goodwin of the Goodwin Brick & Tile Co., at Des Moines, Ia., has bought the Redfield (Ia.) Brick & Tile Works. J. H. Queal will take charge of the plant at once.

The Corrona (Cal.) Pressed Brick and Terra Cotta Co. recently elected the following officers: W. W. Stowell of Los Angeles, president; C. H. Bennett of Los Angeles, Secretary.

The Gas Belt Brick Co., Topeka, Kansas, has been incorporated with $750,000 capital stock to build brick plants in Kansas, Oklahoma, Texas, Arkansas, Louisiana and Missouri.

The Sedalia (Mo.) Clay Mfg. Co. has been incorporated with $50,000 capital stock. The directors for the first year are J. E. Mecusker, G. L. Mecusker, Jerome Moyer, H. K. Bente and C. L. Wilson.

The site for the proposed tile works to be established by the Simons Brick Co., Los Angeles, Cal., has been located on a tract of twenty acres south of the Southern Pacific stock yards at Imeperial Valley.

The Muskogee (Okla.) Pressed Brick Co. has been incorporated with $30,000 capital stock. Incorporators are A. B. Bellis, Frank Fee, and J. H. Gossom, all of Muskogee and J. M. Parkins of Humboldt, Kansas.

The Longmont (Colo.) Brick & Tile Co. is building a $25,000 stiff mud brick plant on the Gunning place. William Stewartson is president and general manager and C. W. Stewart, secretary and treasurer.

G. B. Dickinson, Lester Wade and George Stidham have leased the North brick plant at Mound Valley, Kansas, which was recently bought by Mr. Raber. They will overhaul the plant, kilns, etc., and put it into operation.

A new brick yard is to be located at Benicia, Solono county, Cal., on the Dillan ranch, near Glen Cove. Property owned by the Dominican Fathers has been leased to San Francisco parties and they will commence work immediately.

Jos. Gauthier of Sherbrook, Quebec, is now the general manager of the Le Roy (Kan.) Vitrified Brick Co.'s plant. The company plans several improvements, among them are the building of fifteen cottages for the workmen.

The Ft. Smith Vitrified Brick Co.'s plant at Ft. Smith, Ark., has been finished in 70 days and is now turning out 150,000 brick made of shale. The brick are burned with gas, also the power plant is operated by same.

The Barboursville (Ky.) Clay Mfg. Co., will shortly take over the plant of the Guyan Valley Brick Co. The capital stock of the new company is $25,000. The plant will be thoroughly overhauled and additional machinery added. Rev. M. C. Johnson is interested in the work.

The Fowlerton (Ind.) Drain Tile Co. has incorporated with $10,000 capital stock. Incorporators are John O. Spurgeon, Wm. J. Nesbitt, C. N. Brown, Vaslin Spurgeon and Leslie Nesbitt.

The Virginia Fire Clay Mfg. Co., New Cumberland, W. Va., has been incorporated with $50,000 capital stock. The incorporators are W. W. Ballantyne, C. A. Ballantyne, L. B. Ballantyne, O. M. Brown and R. W. Brown, all of New Cumberland.

Merry Brothers, Augusta, Ga., has been incorporated with $60,000 capital stock and taken over the business of Walter D. Merry, Ernest B. Merry and Arthur R. Merry. The firm of Merry Brothers has been in the brick business for the past six years.

FOR SALE

One power Repress, in number one condition, used only but a short time; capacity 10000 per day. Ask for full particulars.

American Enameled Brick & Tile Co.
1 Madison Ave. New York

EXPERIENCED MANUFACTURER WANTED

Thoroughly experienced brick manufacturer to operate and manage modern plant at Washburn, Wis. Best clay, unlimited market; party with some money to invest preferred,

Address Washburn, care of Clay Record,
Chicago, Ill

Second-Hand Brick Machinery For Sale

1 two-mold brick press.
1 three-mold brick press.
1 four-mold brick press.
1 Freise stiff-mud auger machine, pug mill and cutter.
1 dry press mixer.
2 small engines.
Let us know your wants.

Scott Manufacturing Company,
1811 Third National Bank Bldg. St. Louis, Mo.

Brick Plant for Sale or Lease

A cenveniently located brick plant on the maiu channel of the James River, 90 miles from Richmond, 18 miles to Newport News, and 40 miles to Norfolk, all having a good steady market for brick. Easy transportation for large boats. Want to see plant in operation. Therefore would make very easy terms. Address MRS. AGNES L. TURNER,
Ferguson's Wharf, James River, Va.

FOR SALE

Profitable brick plant aud busiuess; 20,000 capacitv. 4-mold Boyd press; complete equipment. Splendid reputation. Economical situation. Supplies this section; no competitiou; a money-making plant. Owners have no other interests.

Address Durango Pressed Brick Co.,
Durango, Colo.

FOR SALE OR LEASE

A southern Minnesota Brick and Tile Plant, complete in running order; has done a good business last year. Good reason for selling. Address

Minnesota, care Clay Record,
Chicago, Ill.

FOR SALE

One No. 20 Cyclone Disintegrator, made by the C. W. Raymond Co. Has been used about two weeks. Practically new. Address

COLUMBIA BRICK & PLASTER CO.
North East Md.

FOR SALE

A brick and tile plant in Green County, Iowa. Cannot supply the demand. All new machinery. Good reason for selling. Write for particulars to

GREEN, Care of Clay Record,
Chicago, Ill.

WANTED

A first-class Engineer who can handle a corliss eugine and look after machinery in brick plant. Must be a man of ability, later full charge of plant will be given to him if satisfactor. Will pay $900 a year to start.

Address "B E" Care of Clay Record, Chicago.

WANTED

Oue second-hand medium size steam shovel for handling clay or sand.

Address E. J. KELLER,
Lexingtou, Okla.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE

Brick and tile plant; coal and potters' clay mine; all combined in active operation; new machinery, none better; coal and clay, unlimited quantity; superior in quality; suitable for fire brick, enamel brick or fine face brick, terra cotta, tile, sewer pipe, stone ware; and all high refractory material. As to proportion of strata used, it is 25 ft. thick rock top and easy to mine. Clays burn white, buff, gray, brown, and also makes a fine spreckled manganese brick. As to proportion of clay used—best clay in Illinois. Railroad runs direct through center of 900 acres; direct to St. Louis and Chicago. Reason for sale, owner crippled; will sell on easy payments, trade for good real estate, or lease to good, experienced men with capital to operate and increase business: Address,

H. T. M.,
Care of Clay Record, Chicago.

FORCED FOR SALE

Brick yard for sale within six miles of Broad Street Station, Philadelphia, Pa.. every improvement, Penn. Ry. sidings into yard. In operation for orders for about three million brick. Address:

A. B. Co,
Care of Clay Record, Chicago

SECOND HAND BRICK MACHINERY FOR SALE

8 000 new fire brick; 12,000 second haud fire brick.
140 single Grates as good as new, size 3 ft. 9 iu.
18 Kiln doors on frames.
60 double Grates, size 3 ft.
10 plain fire doors.
5 Brick Trucks.
5 Brick Wheel Barrows.
One 40 H. P. Engine.
One 40 H. P. Boiler in good condition.
Several Pumps. One Bottom Dump Car. 800 ft. Small Rail. 2 Switches. 60 ft. 8 inch Canvas Belting. 52 ft. 6 inch Belting, used one year.
Address,

HENRY EHLERS & BRO.,
Watkins, Minn.

DRYER CARS

We have on hand a lot of secoud hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, Ohio

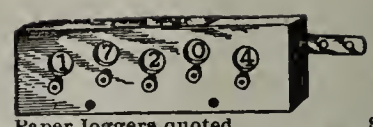
FOR SALE

One hardening cylinder, 72 ft. long, 6 ft. diameter.
One 4-Mold Andrus brick press.
One 9-foot Scott Dry Pan.
One Cedar Rapids Sand Dryer.
25 sand lime brick cars, 3 ft. by 5 ft. top.
2 transfer cars all in good condition.

MORGAN BRICK CO.
Norristown, Pa.

FOR SALE

150 Iron Flat Trucks for Cement, Tile or Brick Yard.
One 70-inch Buffalo Forge Fan.
One 180 H. P. Heine Boiler
Two Freight Elevators
The above machinery is in good condition and at a very low price. S. KRUG WRECKING CO.,
Nebraska City, Neb.



No better made, cut from $8 and $10, to
4 Wheel, $3.00
5 Wheel, $3.25
Guaranteed.
Sold by all dealers.

Paper Joggers quoted.
R. A. HART, 41 White St., BATTLE CREEK, MICH.

GOOD OPENING FOR CAPITAL AND EXPERIENCE

For the purpose of making enlargements would like to interest capital in clay plant, have dry press and stiff mud outfits, making fire brick, face brick, hollow building tile, fire proofing and common brick. Located in the west and have a great advantage in freight rates over a good market on fire brick, fancy face brick, tile etc. Have immense deposits of high-grade fire clay, several varieties of shale and unlimited quantities of good surface clay. Would prefer to interest parties practical in clay working and will offer good inducements.

A. N. M., Care of Clay Record,
Chicago, Ill.

PLANT FOR SALE

Very valuable Brick aud Tile property on James River, Va., complete stiff mud plant, 25 thousand capabity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7.00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles Cheap fuel and labor; can operate with steam dryer year around. Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments

W. L. JONES,
Lock Box 5, Williamsburg, Va.

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick.
Address,

FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE OR LEASE

Clay products plant. Established business. Run ning conceru in one of the best cities in Ohio

Address A. B. care Clay Record.
Chicago, Ill.

FOR SALE

I have a Brick and Tile Plant costing $20,000, Electric Power, Steam Dryer. Make soft mud and stiff mud brick and drain tile. I want a man with a few thousand dollars to take one-half interest in the business If you are looking for a good chance to get into business by investing at 50 cents on the dollar, address

J. J. MILLER,
Bentou Harbor, Mich.

FOR SALE CHEAP

One Bullick 100 H. P. Motor, one 9 foot Raymond Pug Mill, one 18 H.P. Gasoline Engine. All nearly new. Address

KIAMENSI CLAY CO.,
Newport Del.

FOR SALE

New Sand Lime Brick Hardening Cyliuder, 6 feet diameter by 68 feet long. One removable head. Immediate shipment.

FRANKLIN BOILER WORKS CO.,
Troy, N. Y.

THE BOSS SYSTEM OF BURNING BRICK

Involves the ORIGINAL PRINCIPLE of applying AIR UNDER PRESSURE

Absolute control of heat in kiln. **Burns all first-class hard brick.**
Applies to any style of kiln. **40% reduction in fuel cost.**

JOHN C. BOSS, Monger Building, ELKHART, IND.
WRITE FOR CATALOG

Do Your Brick Turn White?

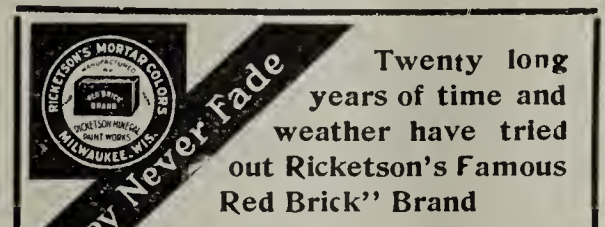
HERE IS THE REMEDY.
PRECIPITATED

Carbonate (K.B. C.F.H.) **of Barytes**

The only preventative for scum and discoloration on facing Brick and Terra Cotta; neutralizing the Sulphate of Lime in the Clay and Water.

Circulars and Particulars on Application.

GABRIEL & SCHALL
205 Pearl Street **NEW YORK** P. O. Box 1712



Twenty long years of time and weather have tried out Ricketson's Famous Red Brick" Brand

..COLOR..

for Mortar, Brick, Cement, Stone, etc., Proves it Absolutely Permanent. Red, Brown, Buff, Purple, Black.

RICKETSON MINERAL PAINT WORKS
MILWAUKEE, WISCONSIN.

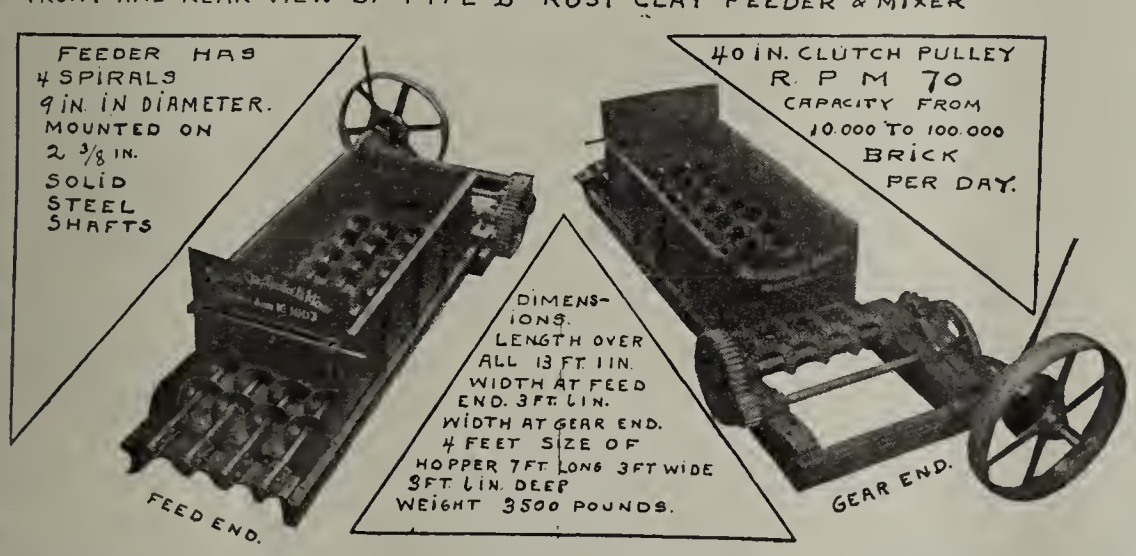
C. K. WILLIAMS & CO.

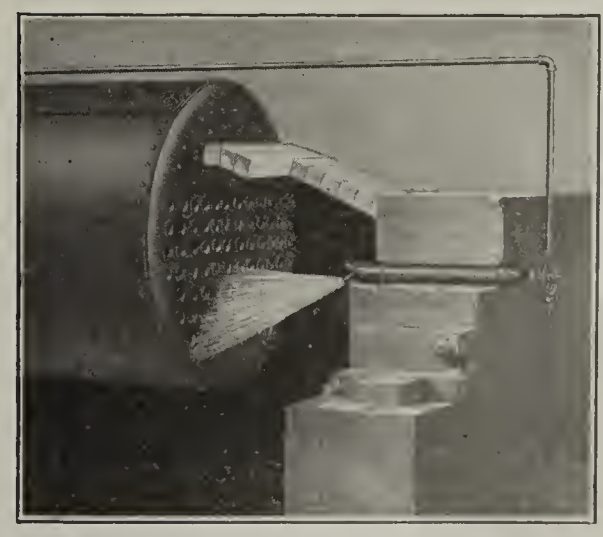
EASTON, PA.

BRICK AND MORTAR

COLORING

"FRONT AND REAR VIEW OF TYPE "B" RUST CLAY FEEDER & MIXER"





Don't Let Your Profits Run Away

We can save you from $500.00 to $1,000.00 per year, through the use of this modern Clay Feeder.

Write today for our latest catalog fully describing this new **Clay Feeder and Mixer.**

The Marion Flue Blower, (patented February 23 1909) will save 10 per cent of your fuel. It will insure you clean tubes; will prolong the life of the boiler; it will prevent the accumulation of soot; it will save the cost of steam hose; it will enable you to clean your boiler while in commision. The accompanying cut shows how the Flue Blower is installed in the rear wall of your boiler. Each blower is fitted with a nozzle which rotates, and each opening in the nozzle blows a section of the boiler tubes at a time. We furnish different sizes as required, and positively guarantee to blow each flue clean.

Please send for our latest catalog fully describing this useful invention.

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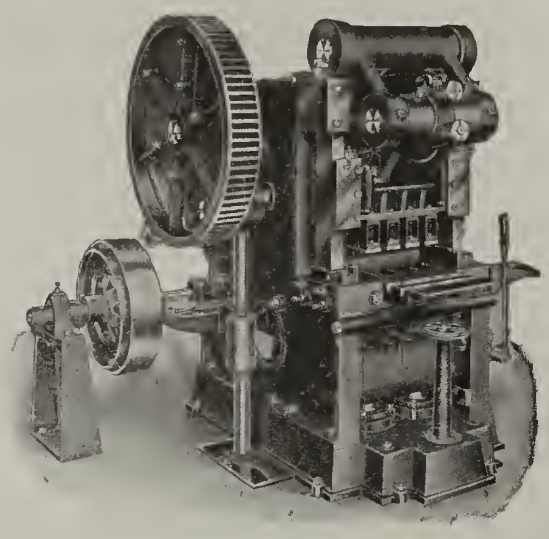
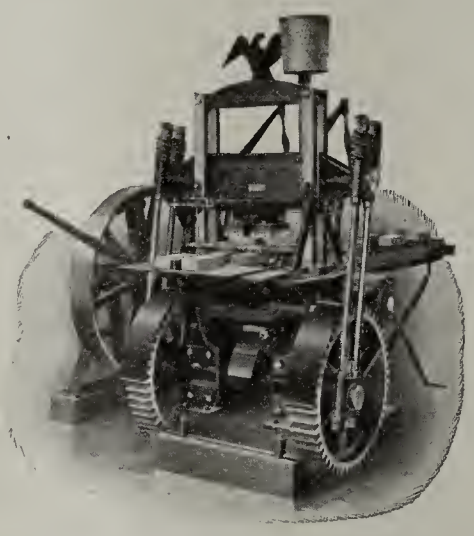
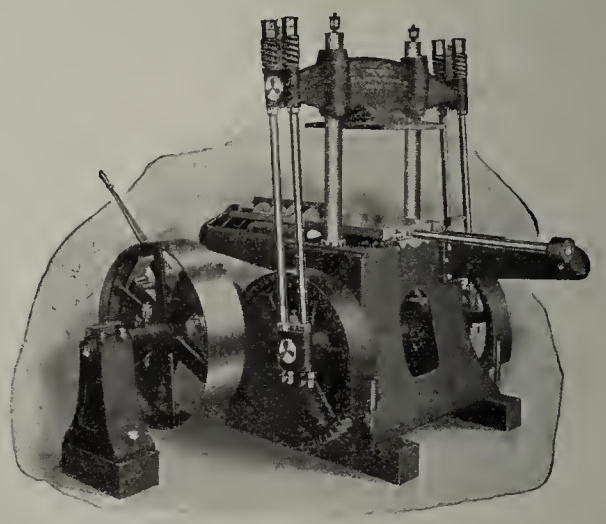
BUCYRUS OHIO, U.S.A.



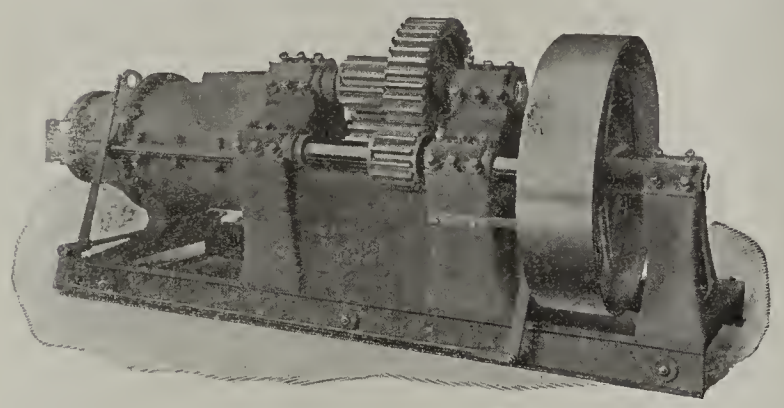
Model "B" Dry Press



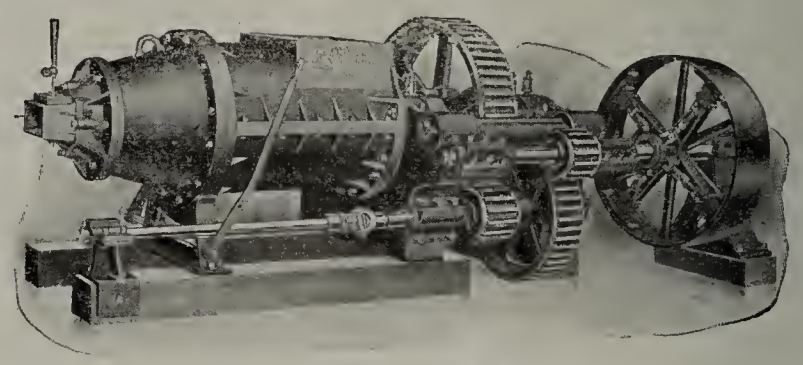
Eagle Repress



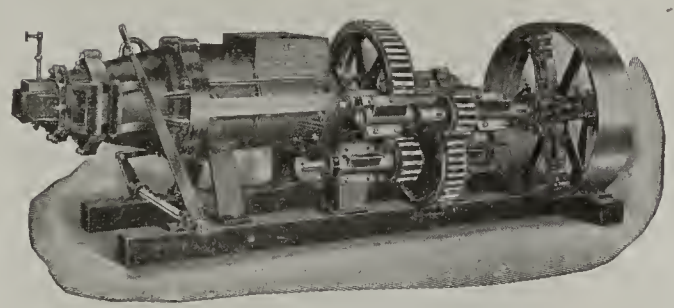
Roofing Tile Press



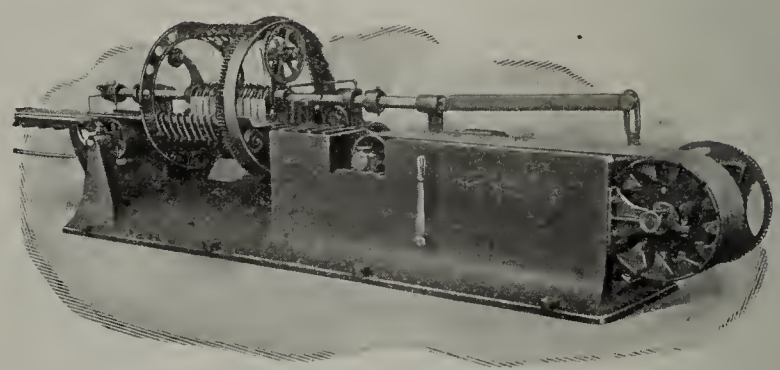
No. 65 Auger Brick Machine



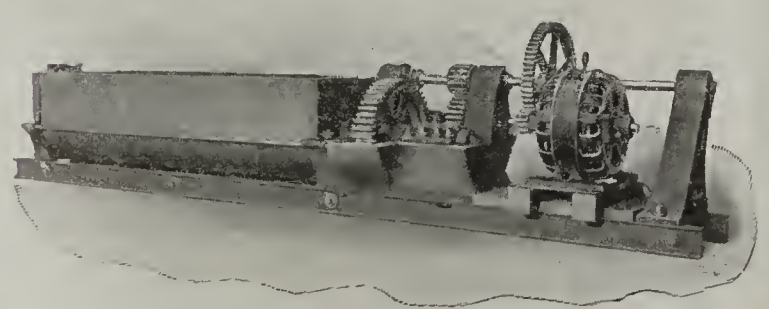
Special Giant Brick Machine



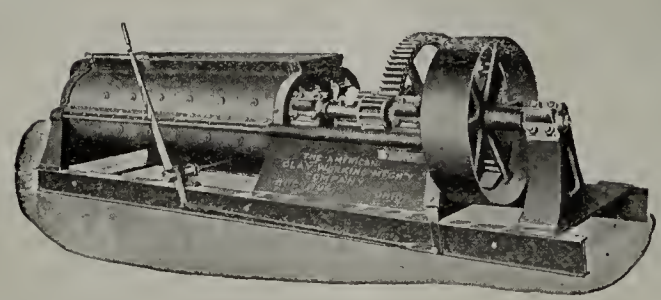
No. 2 Giant Brick Machine



No. 83 Automatic Cutter



No. 51 Electrical Driven Pug Mill

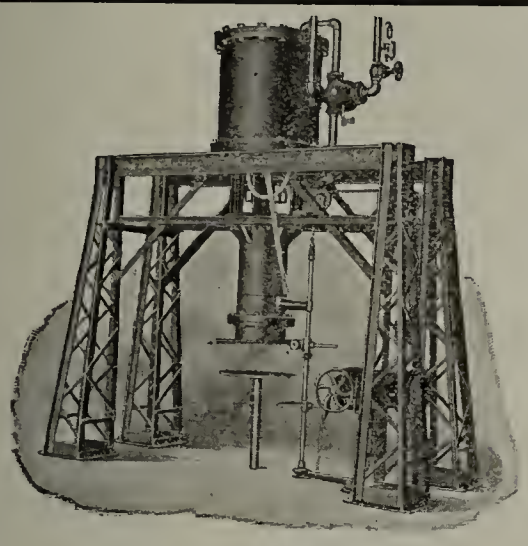


No. 38 Double Shaft Pug Mill

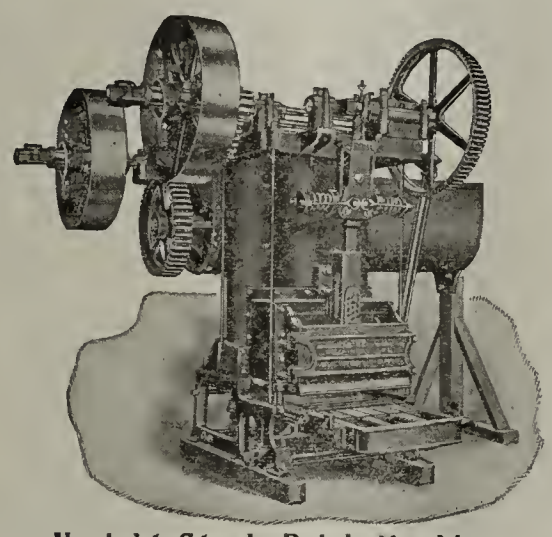
We Build Every Machine and Every Appliance Needed for the Manufacture of Every Class of Clay Products by Every Process

THE AMERICAN CLAY MACHINERY COMPANY

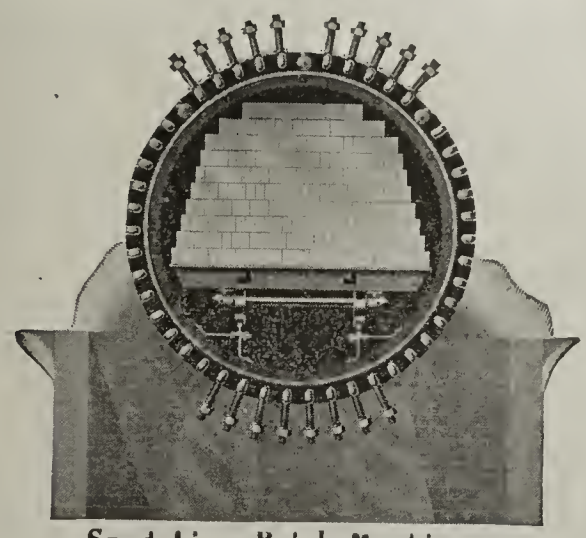
BUCYRUS — BUILT RIGHT RUN RIGHT — OHIO, U.S.A.



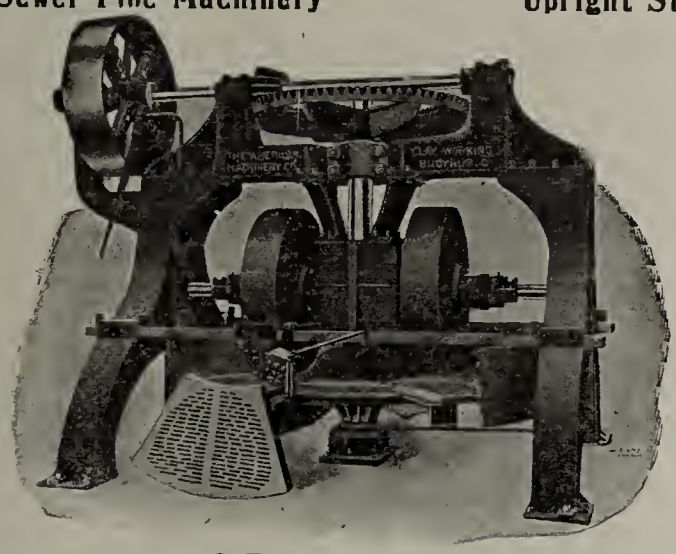
Sewer Pipe Machinery



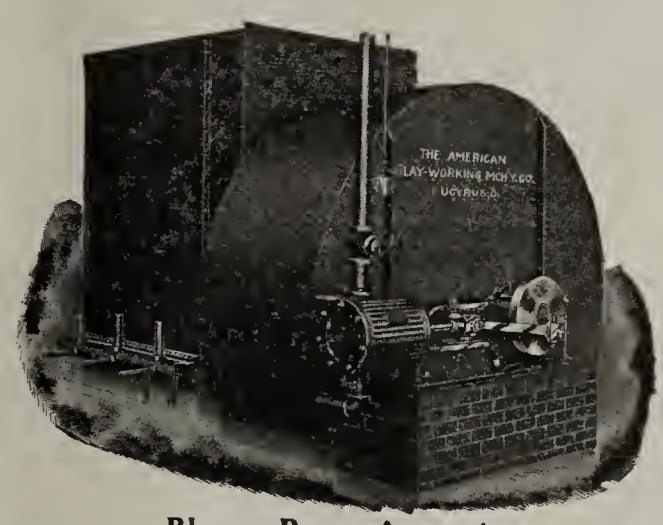
Upright Stock Brick Machine



Sand-Lime Brick Machinery

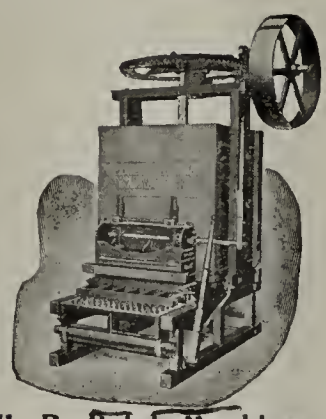


9 Foot Dry Pan

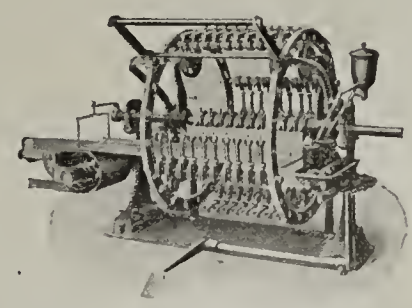


Blower Dryer Apparatus

Mold Sander



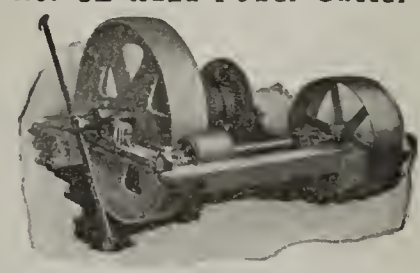
H. P. Brick Machine



No. 62 Hand Power Cutter

Dry Cars

Disintegrators



Winding Drums

We are Much the Largest and Much the Most Extensive Manufacturers of Much the Best Clay Working Machinery in the World

Fire Brick——Fire Clay

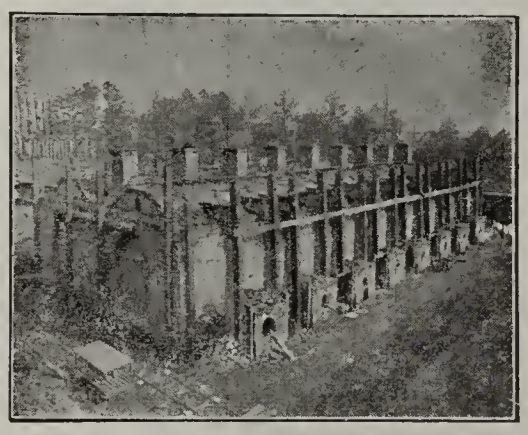
AND FIRE CLAY PRODUCTS

Manufactured out of highest grade Missouri semi-flint fire clay.
A large stock of Number One brick and shapes always on hand.
Let us quote you prices and we will save you money.
Samples sent upon request. Address

Mexico Brick & Fire Clay Co.

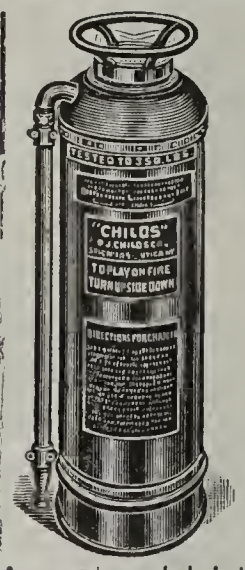
MEXICO, MISSOURI

Something New In Brick Kilns and Dryers



The Dennis Double Chamber Up and Down Draft Brick Kilns and Direct Heat and Hot Air Brick Dryers show many new features that make them superior to all others. Economical, durable and strong in construction and operation, having many points of dvantage that appeal to practical brickmakers. Patented April 14, 1903 and September 8, 1903 Brick plants installed and put in operation. Write for booklet. Correspondence solicited.

F. W. DENNIS,
145 Water St., Norfolk, Va.



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Extinguishers

Protect your Home, Business, Factory

Insurance Reduced. Child can Operate.
Made of Copper. Will Last a Lifetime.

Chemical charges can be procured at any drug store

Write today; don't wait; delays are dangerous.

O. J. Childs Company

Sole Manufacturers — Utica, N. Y.

AMERICAN RING-HAMMER PULVERIZER

Two Models, one for Clay, Shale, one for Rock

Will pulverize from 4 mesh to 200 mesh, 1 to 50 tons per hour, according to size of machine, fineness required, kind and condition of material.

30% to 60% less 3peed, and 25% to 50% less power, due to the RING and its utilization of CENTRIFUGAL FORCE.

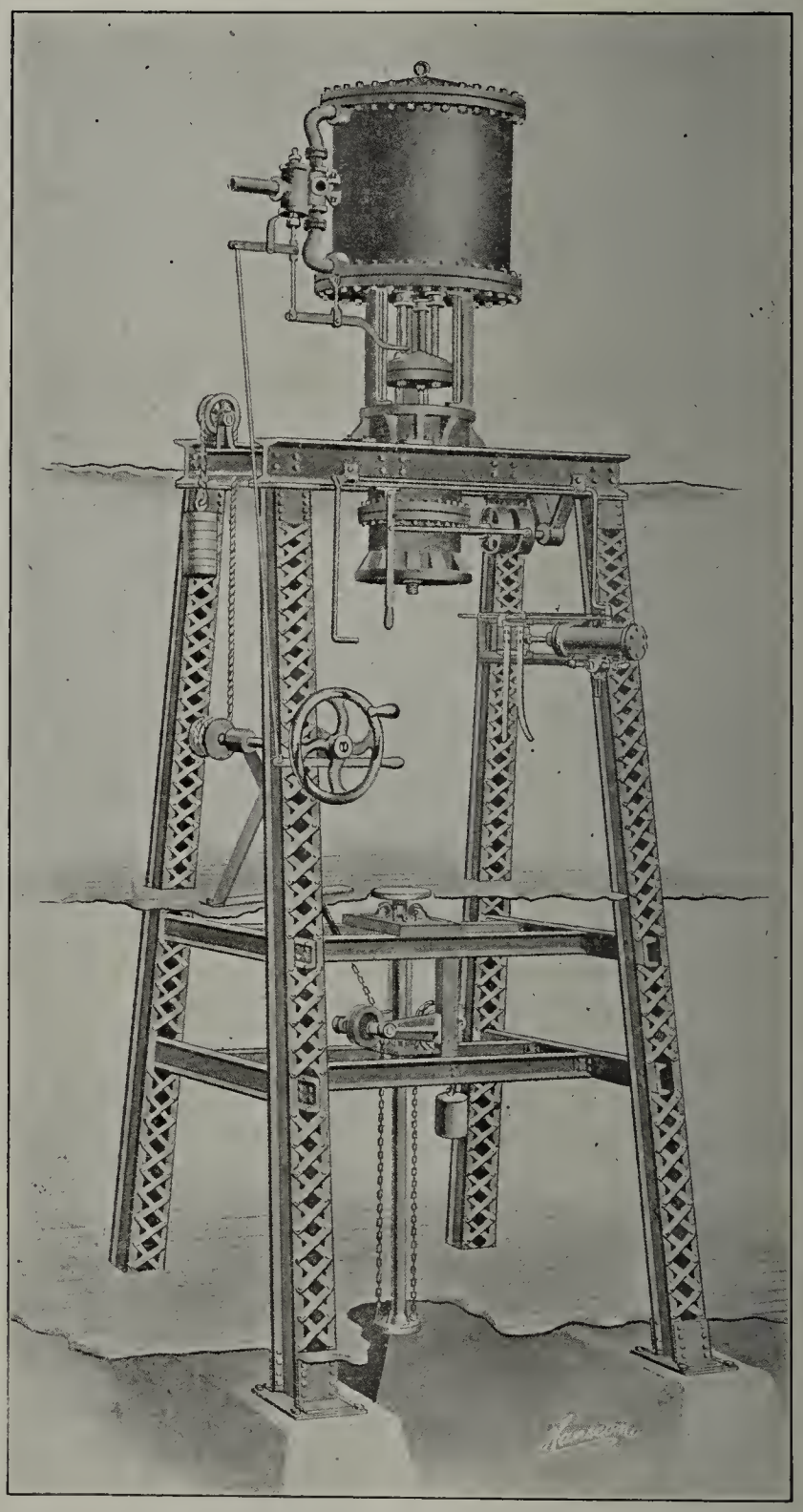
We make six sizes and every machine guaranteed to do the work which it is contracted to do when sold.

Revolving Screens Air Separators
Ask for Circulars and Information

AMERICAN PULVERIZER CO.

Suite 410 Jaccard Bldg., ST. LOUIS, MO.

DISTRICT SALES OFFICES:
F. C. Willis, 36 LaSalle St., Chicago, Ill.
I. R. Coles & Co., 39 Cortland St., New York City.
Lindrooth, Shubart & Co., Boston Bldg., Denver, Colo.



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SEWER-PIPE MACHINERY

COMPLETE EQUIPMENT

THE TURNER, VAUGHN & TAYLOR COMPANY

CUYAHOGA FALLS, O.

REBUILT ENGINES AND BOILERS

The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

ENGINES—Automatic—16x32 Buckeye, 15x14 Erie, 14¼x16 Buckeye, 14½x14 Ball & Wood, 13½x15 Taylor, 13x16 Erie, 12x14 Green, 12x12 N. Y. Safety, 10x10 Fisher, 9½x12 Leffel, 8x10 Allfree, etc.

ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

BOILERS—Stationary—72x18 High Pressure, 72x18 Standard, 72x16, 66x16, 60x20, 60x16, 54x16, 54x14, 54x12, 48x16, 48x14, 44x14, 40x12, 40x9, 36x16, 36x10, etc.

BOILERS—Fire Box—80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 h. p., etc.

BOILERS—Vertical—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 3 h. p., etc.

HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

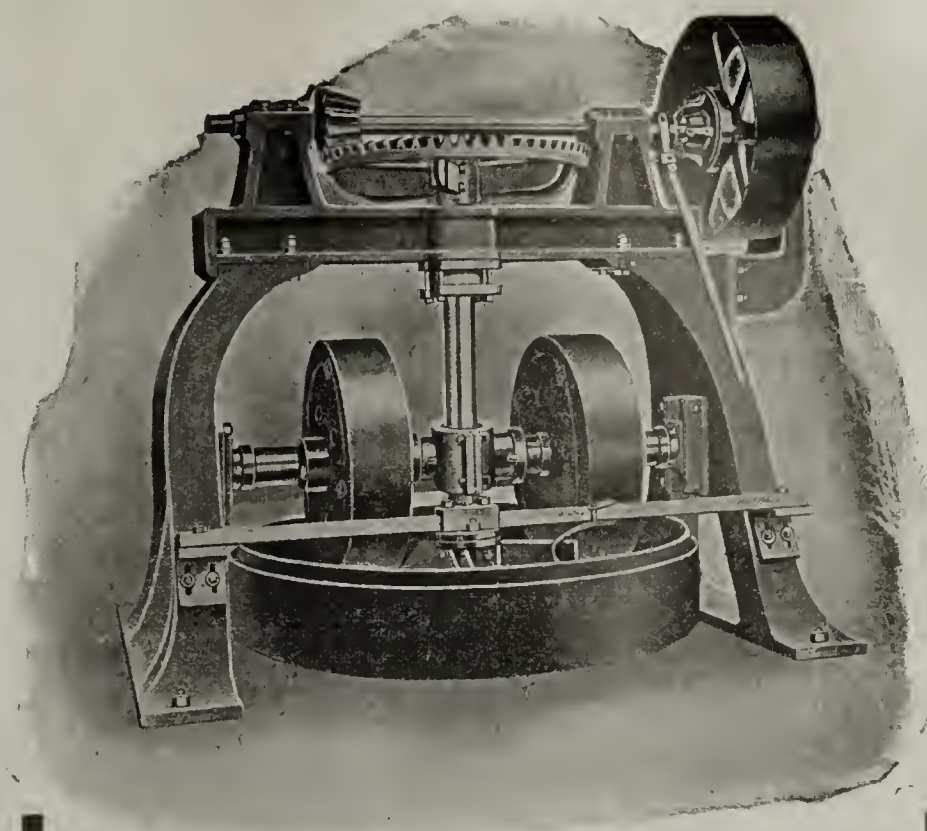
Saw Mills, Lath Mills, Edgers, Cut-Off Saws, Tanks, etc. Write for list.

Also full assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

The Randle Machinery Co.

1732 Powers Street **Cincinnati, Ohio**



PHILLIPS & McLAREN CO. PITTSBURG, PA.

BUILDERS OF

Pittsburgh Standard Dry and Wet, Revolving and Stationary Grinding Pans for Brick, Cement, Sand, Terra Cotta and all kinds of Refractory Materials.

ROCK AND ORE CRUSHERS

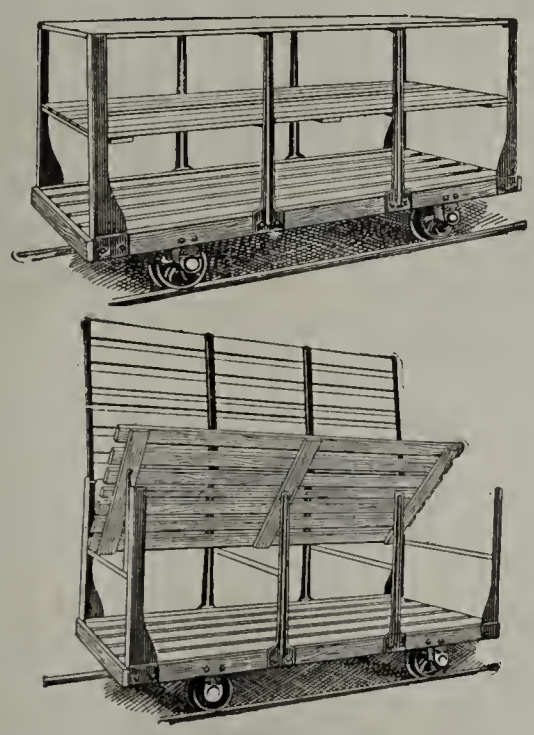
When writing for prices state kind of material and capacity required.

Eastern Offices

Stephen Girard Building, Philadelphia, Pa.

The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices



Vulcan Iron Works MASON CITY, IOWA

"A CHANGE IN FLUES MAKES THE DIFFERENCE IN DRYERS"

POTOMAC BRICK COMPANY

1413-G Street, N. W.

ELLIOTT S. MORSE, Gen. Mgr.

Washington, D. C., March 19, 1909.

THE KING ENGINEERING CO.,
Richmond Va.

Gentlemen:—Our No. 1 10-tunnel Sharer Radiated heat dryer before it was remodeled by you gave us an average of 55 cars per day of dry brick.

You completed the reconstruction of this dryer the latter part of January last. This day we have examined our records and find that our daily average now is 80 cars dry brick.

Yours very truly,

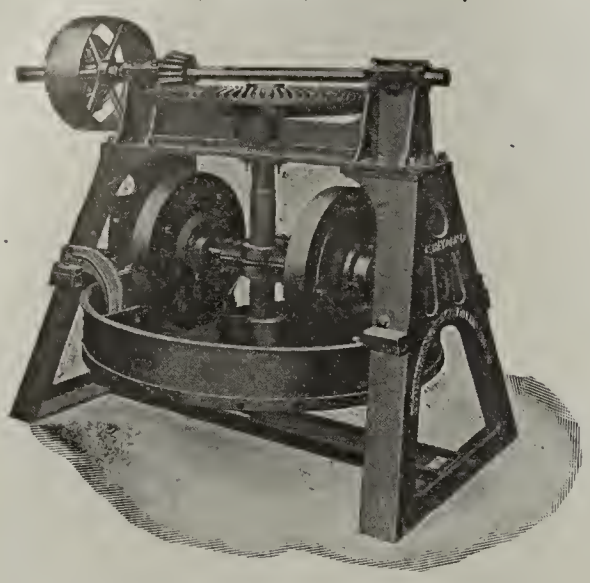
(Copy) ELLIOTT S. MORSE.

That which we have done for the above Company **we can do for You** We can remodel **any** Radiated heat dryer **and increase its capacity** from 15 to 30 per cent.

THE KING ENGINEERING COMPANY

RICHMOND, VA.

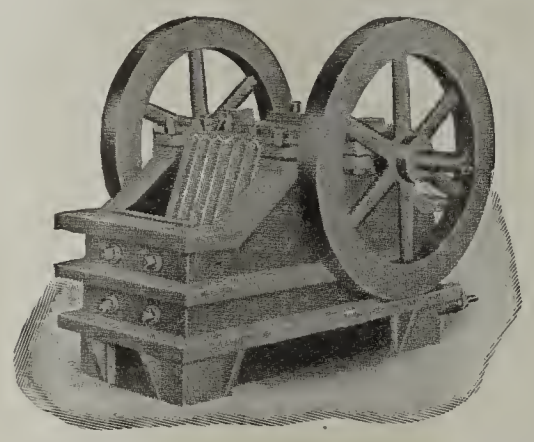
THE HAYDEN DRY PAN.



Masssive and well proportioned.
Best material.
Time tried and reliable.
Large capacity.
Acurate mechanism.
Independent or yoked mullers.

Send for specifications and prices before buying.

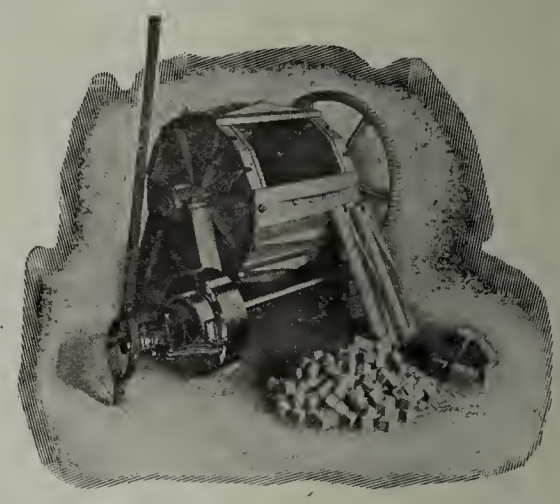
THE HAYDEN CLAY CRUSHER



This Crusher is specially designed and adapted for use as an auxiliary to the dry pan.
Capacity 10 to 30 tons per hour.
Simply constructed and the strongest machine of the kind on the market.

Send for circular and prices.

THE HAYDEN BRICK TESTING RATTLER



For testing paving brick.
Built to the standard specifications of the N. B. M. A.
Best material and workmanship.

Send for descriptive matter.

The P. HAYDEN S. H. CO., Foundry and Machine Dept.

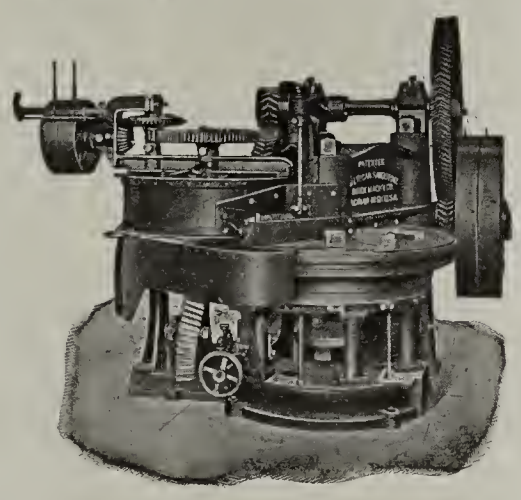
Manufacturers of

WET AND DRY PANS, CLAY CRUSHERS, STEAM CLAY PRESSES, RATTLERS, BRICK CARS, CARWHEELS, AXLES, KILN BANDS, etc.

112 West Broad Street **COLUMBUS, OHIO**

The American Sandstone Brick Machinery Co.

INCORPORATED APRIL, 1902
SAGINAW W. S., MICH.



Improved Saginaw Rotary Presses

Are now being built with extra table for making fancy brick, on which double pressure is exerted.

Don't confuse our Practical System with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant, starting and operating at our expense until at least 100,000 brick are made before asking for a settlement.

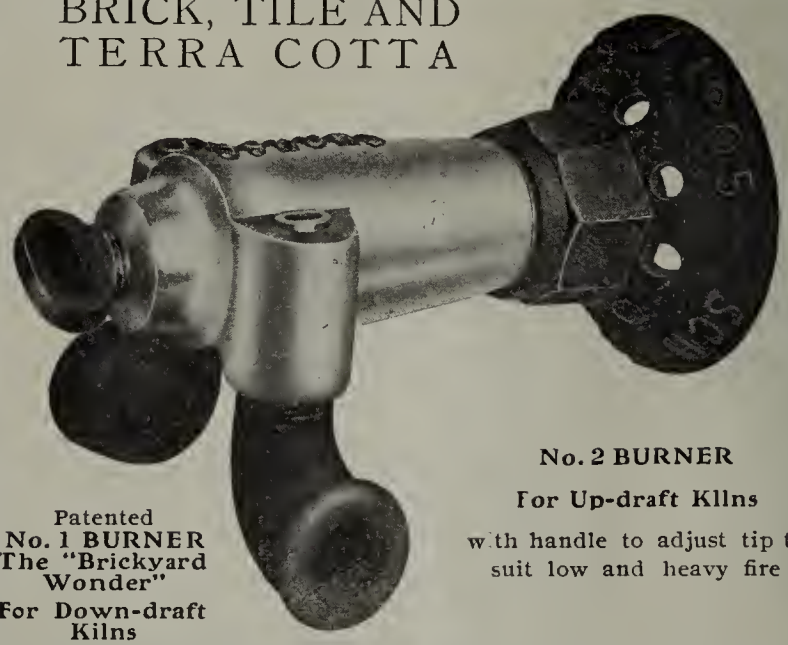
Our plants are **installed under the supervision of Practical Engineers who know how Sand-Lime Brick should be and can be made.** We have **Practical Plants Running Successfully** to show to prospective investors.

WE ARE NOT SCIENTISTS

We **Produce Results,** because we are the **Oldest Practical Sand-Lime Engineering Company Doing Business in the United States,** and **we defy contradiction.**

SCHURS Perfected Oil Burners

MOST ECONOMICAL BURNERS ON THE MARKET. DESIGNED ESPECIALLY FOR BURNING BRICK, TILE AND TERRA COTTA



ADJUSTABLE TIP

Patented
No. 1 BURNER
The "Brickyard Wonder"
For Down-draft Kilns

No. 2 BURNER
For Up-draft Kilns
with handle to adjust tip to suit low and heavy fire

Not an experiment, but a severely tested, well proved burner whose superiority to all others has been amply demonstrated.

Write for Booklet containing full information.

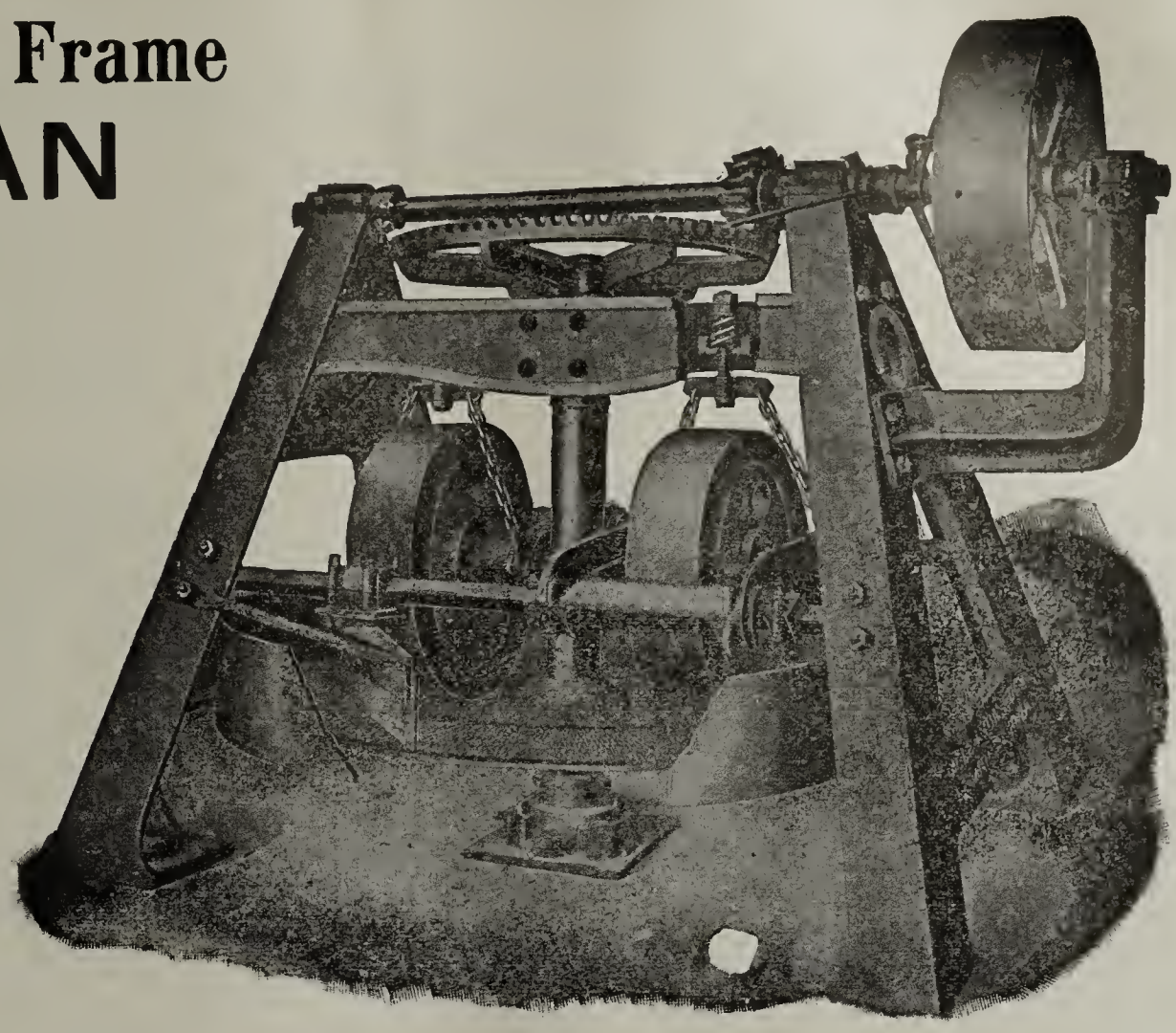
JOHN SCHURS, Patentee and Manufacturer
1007 NORTH MAIN STREET LOS ANGELES, CAL.

Nine Foot Iron Frame
DRY PAN

With Independent
and Suspended

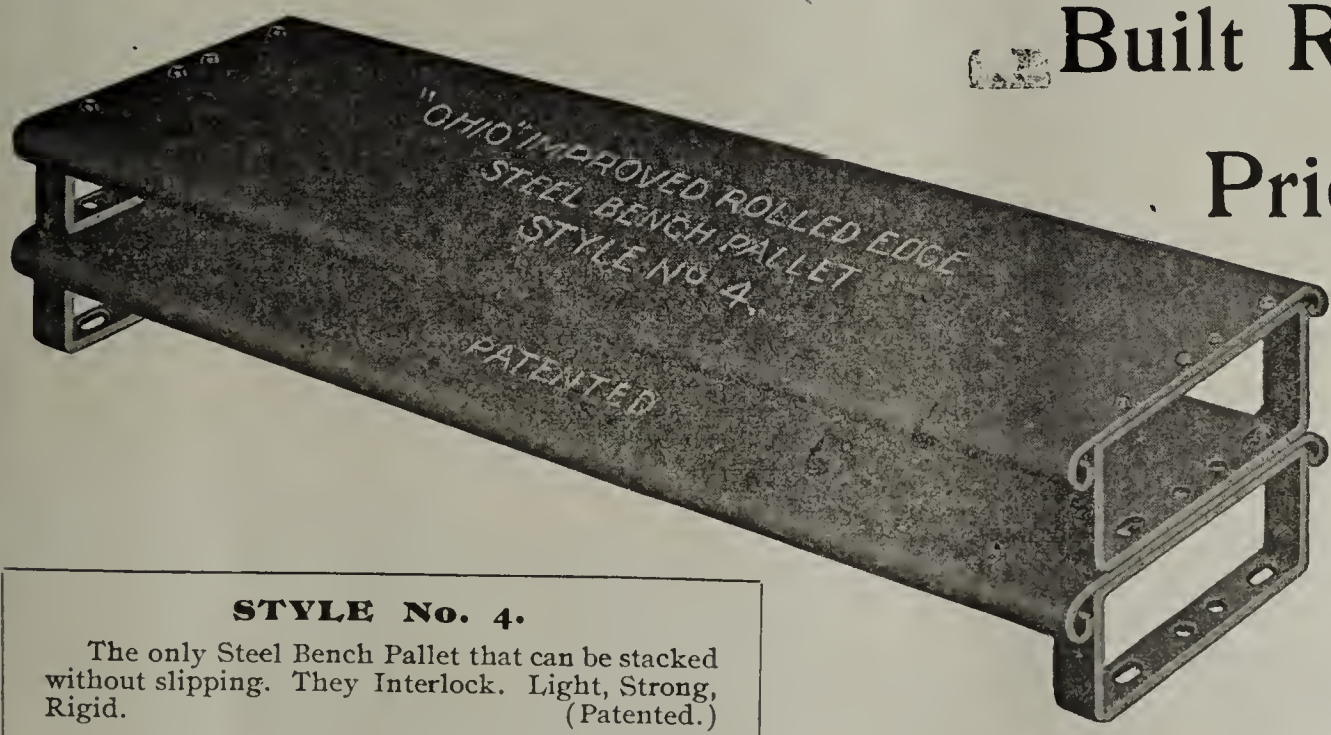
MULLERS

A well-tried and
proven Success.



EAGLE IRON WORKS, BUILDERS, DES MOINES, IOWA

Steel Brick Pallets



Built Right,

Price Right,

Write Us

ALL STYLES

STYLE No. 4.

The only Steel Bench Pallet that can be stacked without slipping. They Interlock. Light, Strong, Rigid. (Patented.)

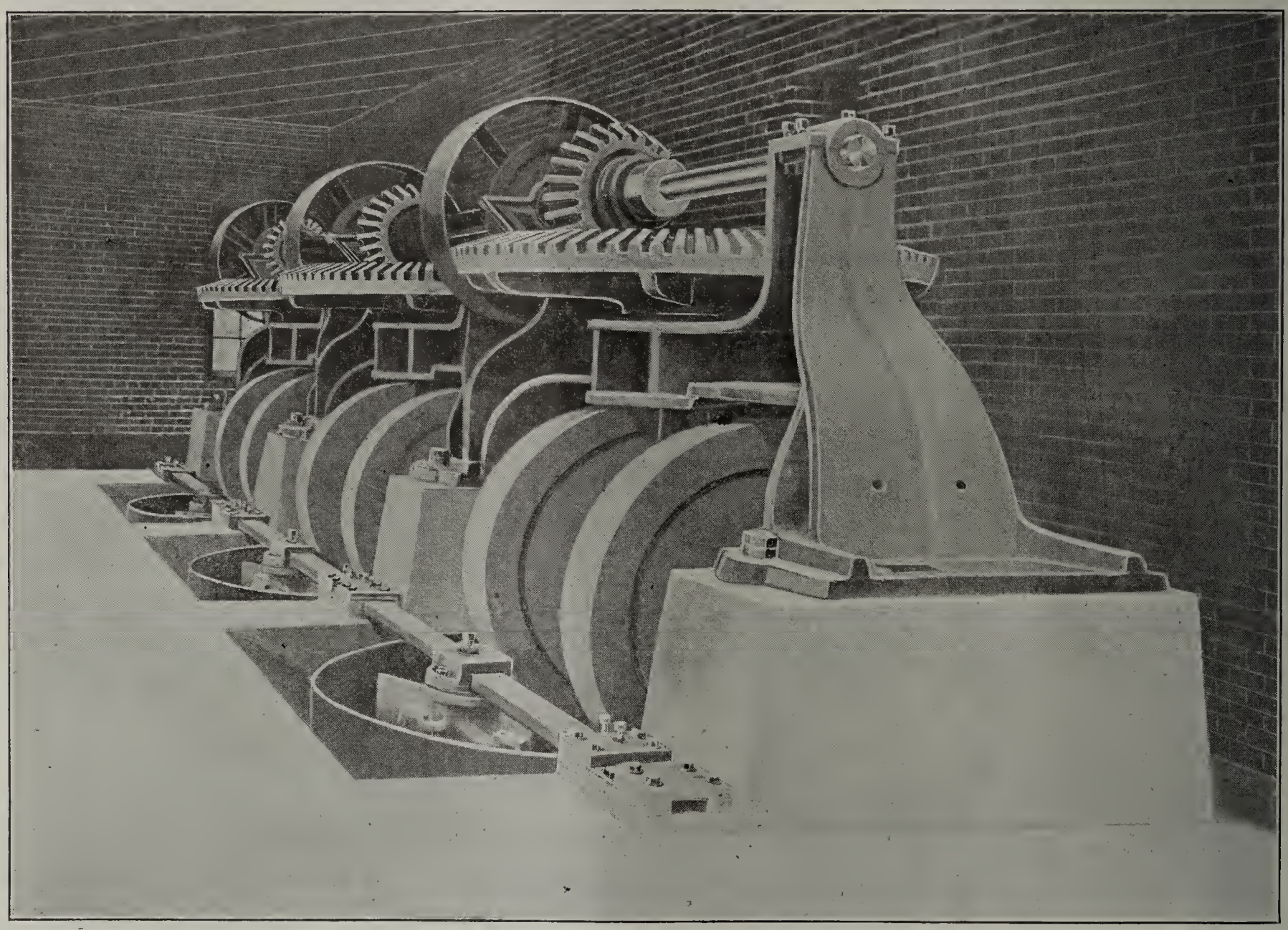
MADE EXCLUSIVELY BY

THE OHIO GALVANIZING & MANUFACTURING CO.

NILES, OHIO

Our Dry and Wet Pans are worth your investigation

We build them eight, nine and ten feet in diameter, weighing 30 to 50,000 pounds. They have great crushing and screening capacities



We also manufacture complete equipment for Sewer Pipe, Brick, Terra Cotta Drain Tile and Fire-Proofing Works

Write for Description and Price

The Means Foundry & Machine Co.

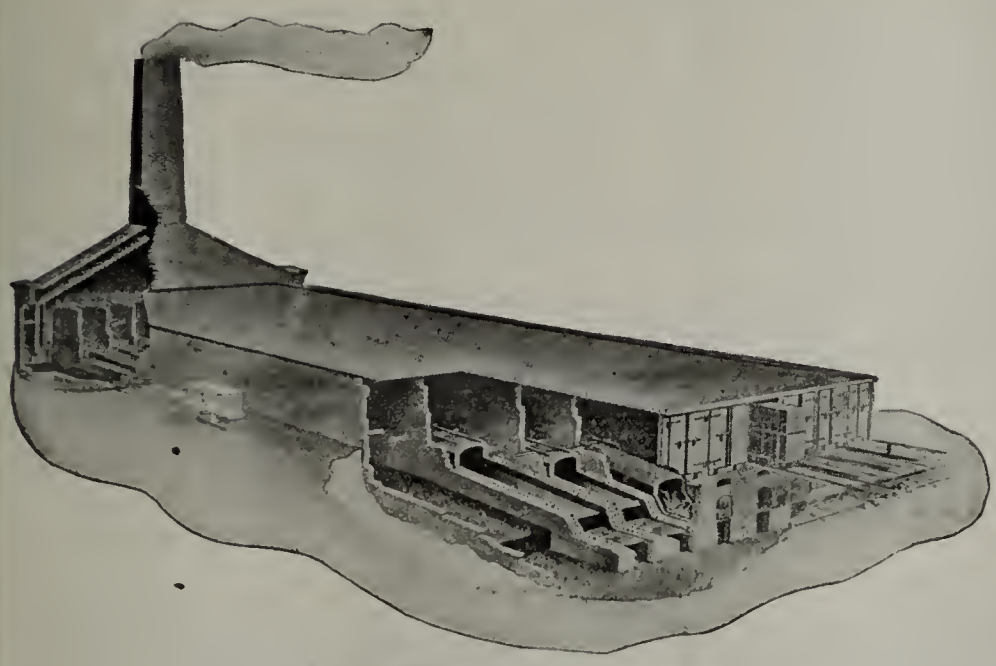
Eastern Agents
WILSON KILN & DRYER CO.
West End Trust Bldg.
Philadelphia, Pa.

Steubenville, Ohio

Wilson Kilns and Dryers

Built by Wilson Kiln & Dryer Co., Capacity 100,000 Brick Per Day.

Patented July 8, 1902



Patented March 3, 1903. No. 721988

Why are we always busy?

Because we study the brick business and build kilns and dryers to suit the conditions.

Our smoke-consuming furnaces, and continuous waste heat system, kiln floors, and test kilns have been in every day use for several years and have proven very satisfactory.

Our Brick Kilns are modern in every way, and have proven successful wherever built.

Our Radiation Heat Dryer has more radiating surface than any other dryer in use.

The Kilns and Dryers are very economical in construction and operation. We believe we have the most satisfactory Kiln and Dryer system to produce results on the market.

Wilson Kiln & Dryer Co.
West End Trust Building
Philadelphia, Pa.

PAUL FUCHS

Manager of the Excelsior Granite Brick Co. -:- Specialist for the Sand-Lime Brick Industry

Inventor of a New Process for Making "GRANITE BRICK"

My system enables the manufacturer [to turn out a sand-lime brick of a compression strength of 9,000 pounds per square inch from proper raw materials. Send in a one-pound fair average sample of your sand and a one-pound sample of your lime for examination.

Porcelain Enamel for Clay Brick

Forward, express charges prepaid, ten brick for testing purposes.

Special Enamel for Sand-Lime Brick

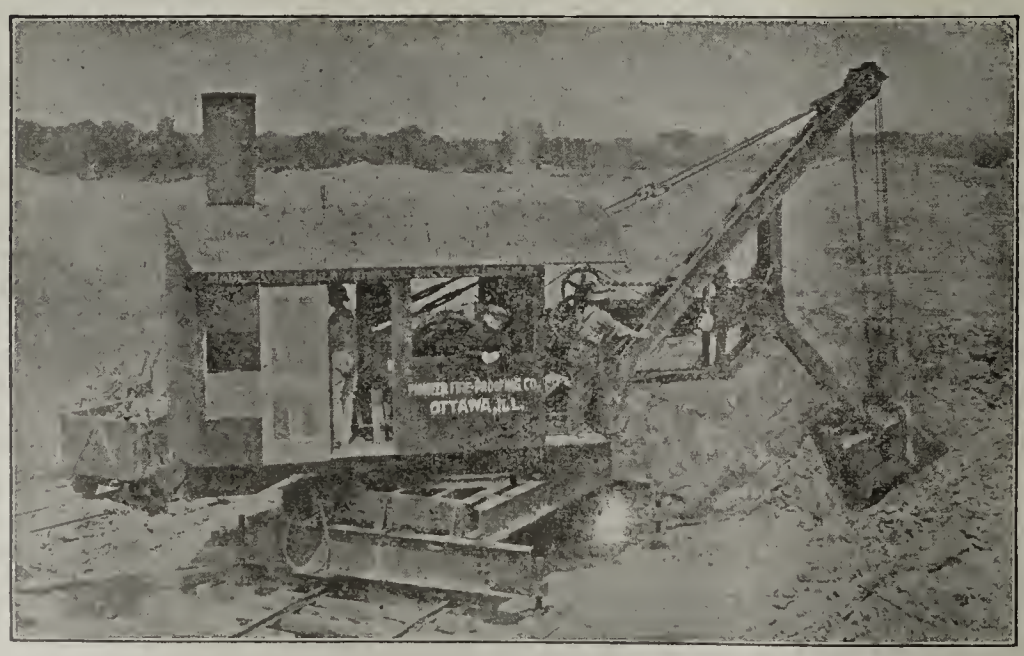
Send in as many brick as colors wanted and specify colors desired.

611 CARMEN AVE. Chicago, U.S.A.

HANDLE YOUR CLAY WITH ONE MAN AND

The Thew Steam Shovels

Made in Four Sizes. Mounted on Car Wheels or Traction Wheels.



Type No. 2 Shovel—Pioneer Fireproofing Co., Ottawa, Ill.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adjusted to cut to any desired level.

: : Ouly One Operator Required.
Wire Cables used Instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickyards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

Write us for Catalogues and Information.

THE THEW AUTOMATIC SHOVEL CO.

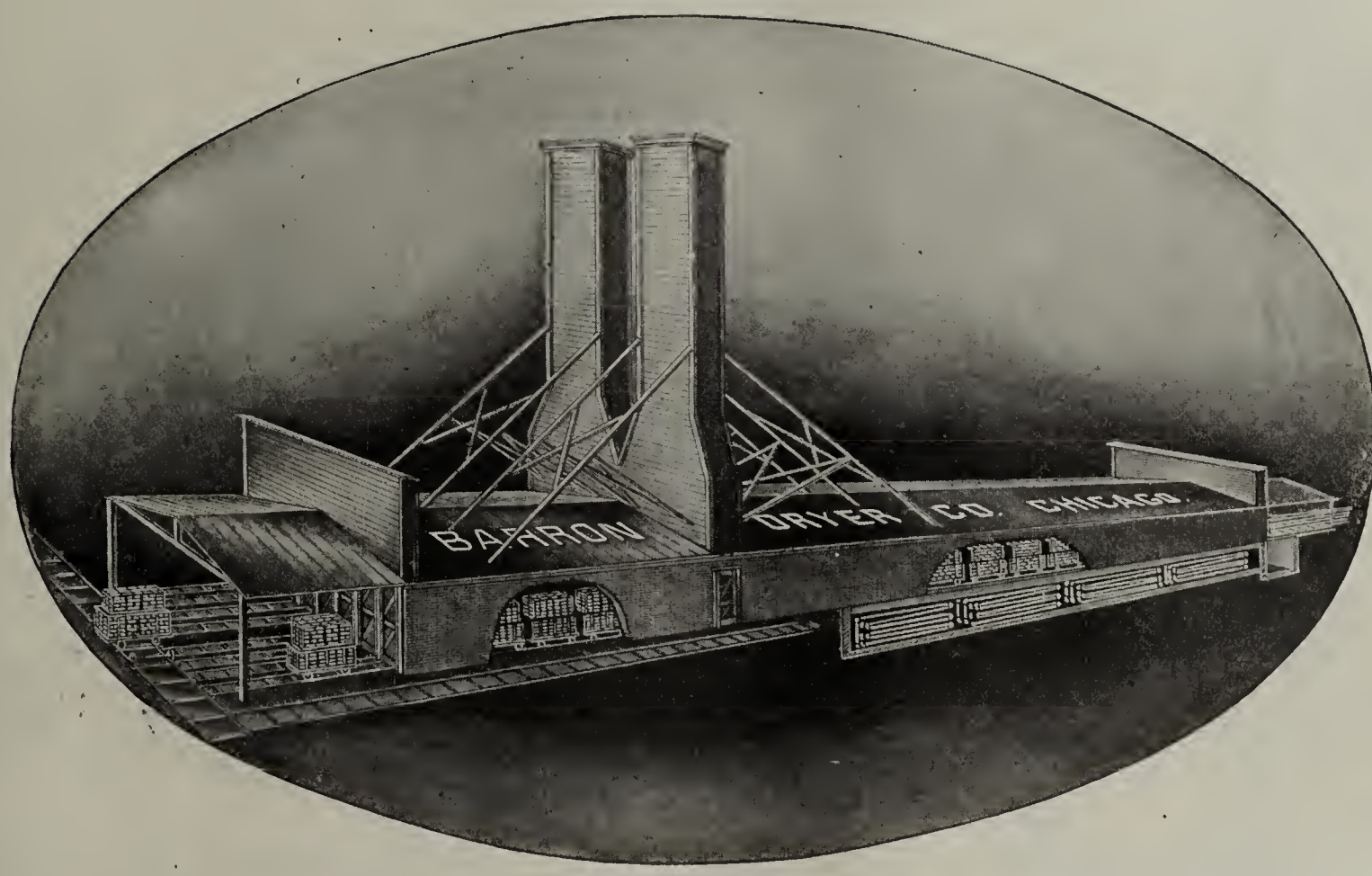
LORAIN, OHIO

BARRON DRYER COMPANY

Established 1879

MANUFACTURERS, PATENTEES and BUILDERS of the

CHICAGO IRON CLAD DRYERS
BARRON'S TENDER CLAY DRYERS



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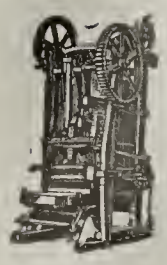
CASTINGS, FORGINGS, PIPE, VALVES, FITTINGS
RAILS, SPLICES, SPIKE, STRUCTURAL MATERIAL

OFFICE AND SHOPS **18 SLOAN STREET** ON C. & N. W. RY. **CHICAGO**



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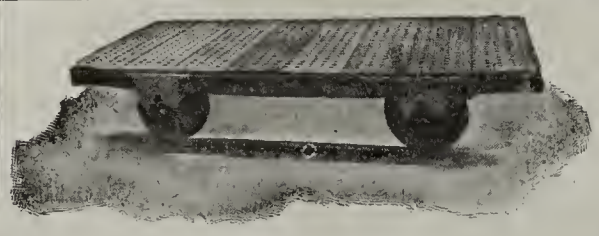
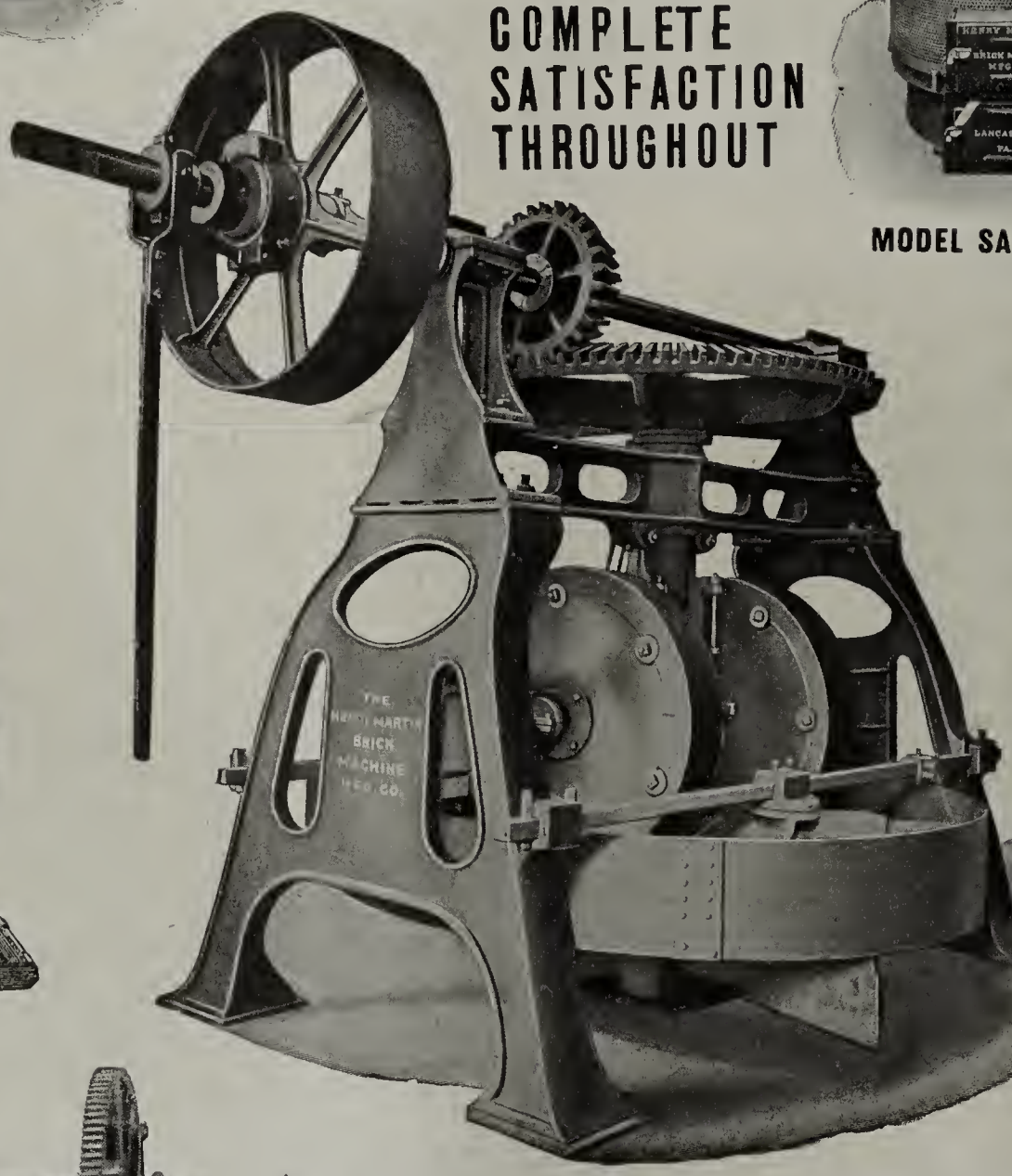
IS KNOWN THE WORLD OVER FOR

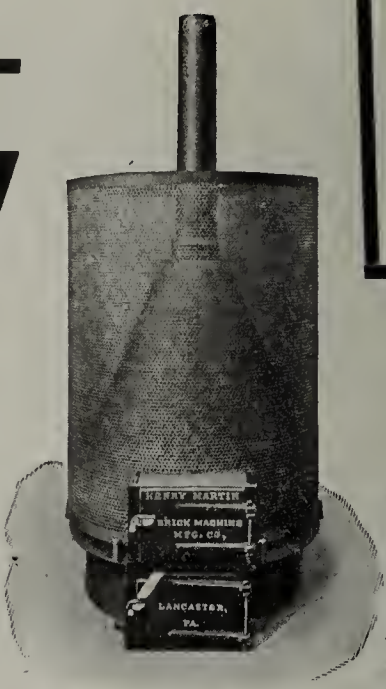
ITS SIMPLICITY DURABILITY AND COMPLETE SATISFACTION THROUGHOUT



DRYER CARS

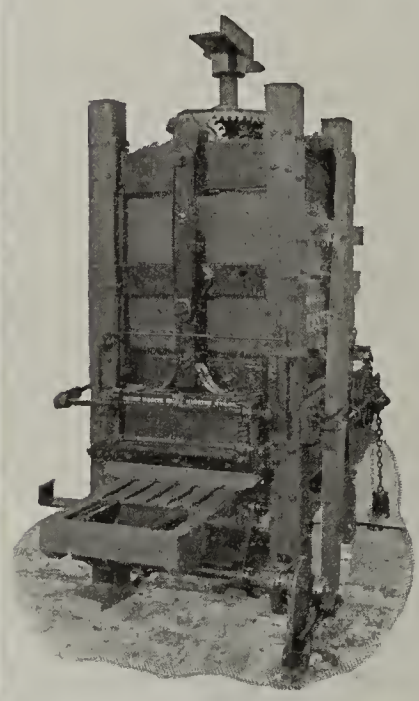
TRUCKS



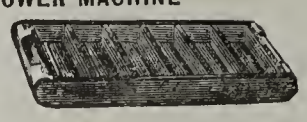


MODEL SAND DRYER

WE GUARANTEE OUR MACHINERY



HORSE POWER MACHINE



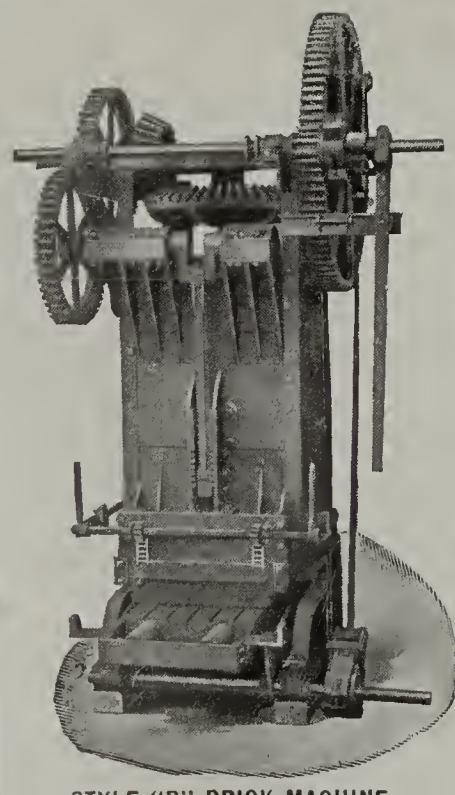
BRICK MOULDS THAT ARE BUILT FOR HARD USAGE IS THE "MARTIN." TRY A SET

YARD SUPPLIES

OF ALL KINDS BUILT RIGHT

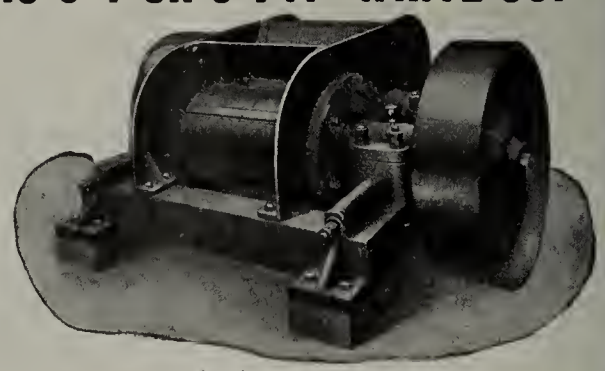
TRUCKS

WE BUILD DRY OR WET PANS 5-7 OR 9-FT. WRITE US.



STYLE "P" BRICK MACHINE

"WE FURNISH EVERYTHING THE BRICK-MAKER NEEDS"



STYLE "P" CRUSHER

MARTIN

CLAY-WORKING EHGINEERS & MACHINERY EXPERTS

LANCASTER, PENNA., U. S. A.

THE "MARTIN" STEAM BRICK "DRYING SYSTEM"

PATENTED February, 22d, 1898, No. 599509
October 10, 1905. No. 95520
November 14, 1905, No. 804489
May 26, 1908. No. 888831

This Dryer, and the design in arranging it, are under the protection of the United States Government by virtue of patents granted. Patents have also been taken out in all the principal foreign countries. We are the sole owners and control these important patents and have authorized NO ONE to manufacture or sell the "MARTIN"

RACK PIPE STEAM BRICK DRYERS

YOUR BRICK DRY OVER NIGHT

LABOR SAVING THROUGHOUT

ADAPTED FOR SOFT-MUD OR STIFF-MUD BRICK

SUPERIOR IN EVERY RESPECT TO ANY OTHER SYSTEM—Labor Saving Throughout. Dispenses with Truckers and car Pushers. Pallets Automatically Return to Brick Machine. Quick to install and low in price, and takes up very little Yard room.

The sale and construction of the "Martin" Rack Pipe Steam Brick Dryer is under the direct supervision of the Factory Office at Lancaster, Pa.

FOR FURTHER INFORMATION, ADDRESS

THE HENRY MARTIN BRICK MACHINE MFG. CO., Inc.

LANCASTER, PA., U. S. A.

Silicate Brick Made by the "Division Method" Patented

THE PHILADELPHIA OPERA HOUSE

Built by Oscar Hammerstein and called the finest Opera House in the World. This beautiful building is faced with over 500,000 of our WHIE SILICATE BRICK, made under our patented process. These bricks were also used to line the wall at back of stage and also for the stairways.

The building seats 4,100 people and measures 240 feet on Broad Street and 160 feet on Poplar Street.

How would you like to make Brick suitable for Facing Buildings like this and do it cheaper than common brick can be made in any other way out of sand and lime?

We challenge any one to make as good a brick as we do by our process, and will allow him twice our cost.

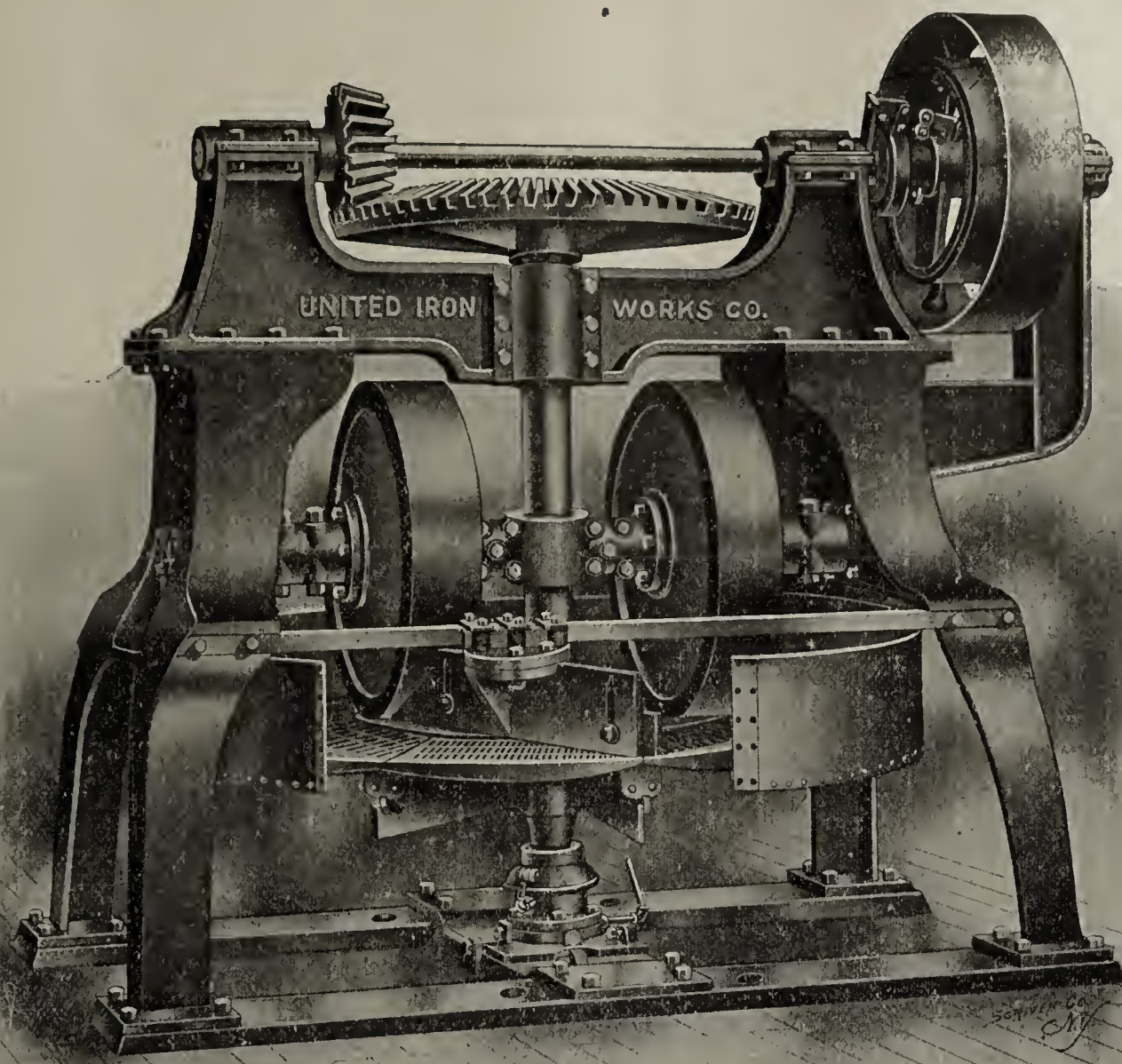
The factory we built last year at Washington, D. C., is pronounced the most compact and cleanest known, and the product the finest brick produced.

WE CAN DO AS WELL FOR YOU. ASK US ABOUT IT AND LET US SHOW YOU

International Sand-Lime Brick & Machinery Company

Engineers and Contractors for Silicate Brick Factories

90 WEST STREET, NEW YORK, N. Y.



Here's What One of the Largest Cement Companies in the United States Says About our "Pittsburg" Dry Pan:

"Answering yours of the 19th instant; We are pleased to state that the dry pan which we purchased of you about a year ago has given entire satisfaction. We consider it one of the best, if not the best, dry pan manufactured and shall, indeed, be pleased to recommend it to prospective purchasers of such machinery.

Yours truly,

WESTERN STATES PORTLAND CEMENT CO."

And they Backed up their statement by ordering recently THREE MORE Pans from us

UNITED IRON WORKS COMPANY

General Offices: SPRINGFIELD, MO.

SPRINGFIELD, MO.; AURORA, MO.; IOLA, KAS.; PITTSBURG, KAS.
CHERRYVALE, KAS.; KANSAS CITY, MO.

No. 217-E
Electric Side Dump Car.

No. 145
Ball Bearing Turntable. Made in sizes from 4 ft. to 11 ft. in diameter.

No. 161 A
Cable Bottom [illegible] trip and [illegible]

CARS FOR BRICK YARDS, CEMENT WORKS, CONCRETE BLOCK MANUFACTURERS, STONE QUARRIES, ETC.

NO. 217 S
Either Side Rocker Dump Car.

TURNTABLES, TRANSFER CARS, DRYER CARS, TRACK, SWITCHES, BRICK PALLETS.

NO. 128
Heavy Double Deck Car
Patent Malleable Iron Uprights.

NO. 142
Transfer Car

NO. 129
Double Deck Car.

NO. 277
Steel Mine and Quarry Car.

The Atlas Car and Mfg. Co.

CLEVELAND, OHIO

VOL. 35 NO. 4

CLAY RECORD

A JOURNAL DEVOTED TO THE DISSEMINATION OF ALL MATTERS PERTAINING TO THE CLAY INDUSTRY

August 30, 1909

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imperative demands from all sections of the country for a cutting table to accurately cut stiff mud face brick has brought out the Champion, the next upward step in the evolution of Rotary Cutters. It is semi-automatic and all of the desired qualities are there, we find nothing to improve about it. It has won its way by sheer merit. It has the good will of every face brick maker who uses it, and many more who have but seen it. It is chock full of perfection. We haven't room to tell you all about it here, but write now.

THE C. W. RAYMOND COMPANY,
DAYTON, OHIO, U. S. A.

The Andrus Brick Press Makes Brick Every Day

Been doing it 20 years.
Strong Simple and Capable.
24 in operation in St. Louis District.

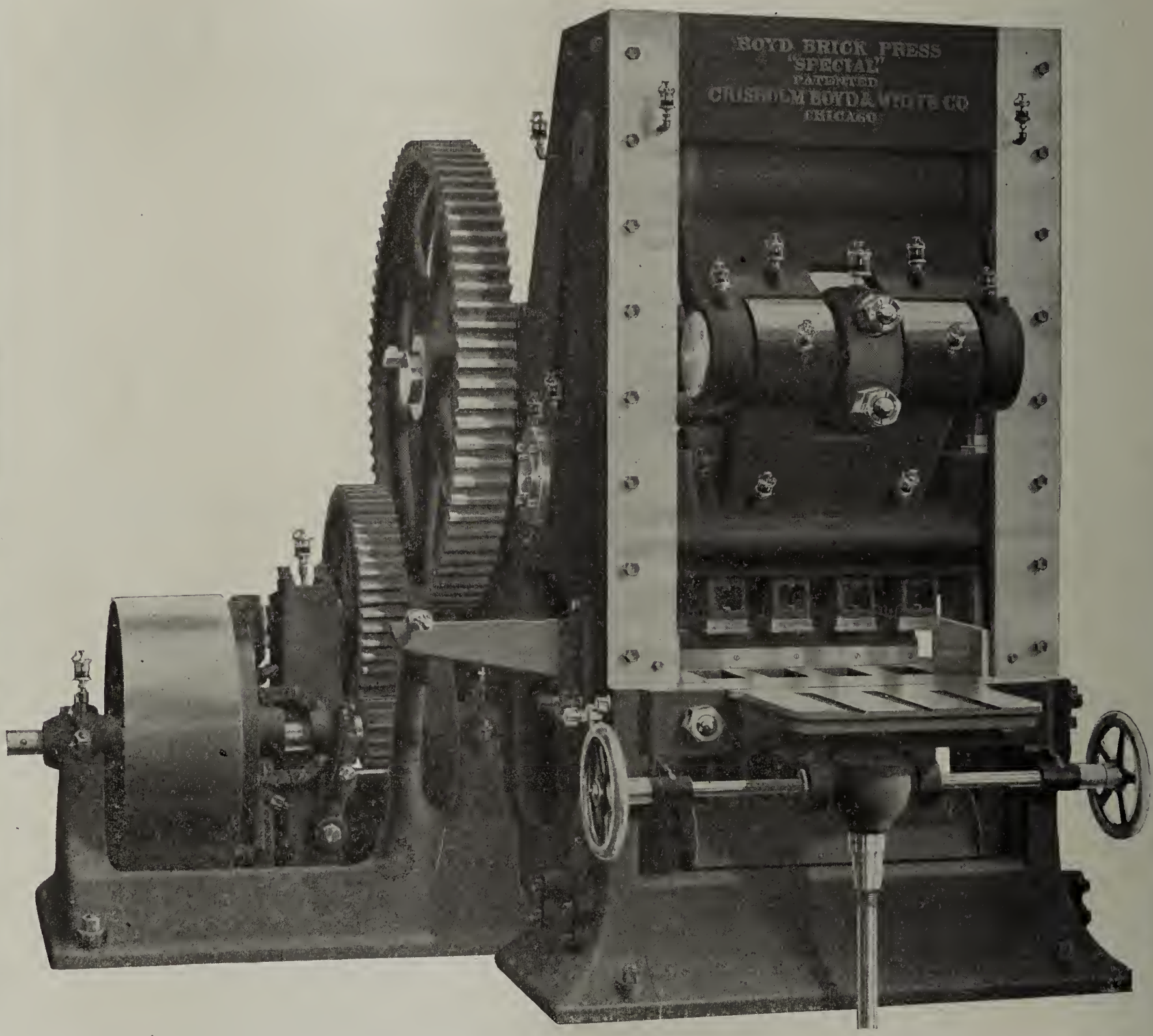
INVESTIGATE

Scott Manufacturing Co.

1815 THIRD NATIONAL BANK BUILDING
ST. LOUIS ~ ~ MISSOURI

THE BOYD BRICK PRESS

Built in Two, Four and Six-Mold Sizes



FOUR-MOLD SPECIAL

BRICK PLANTS designed and complete machinery equipment furnished. More Boyd Presses in use than all other Press Brick Machines combined.

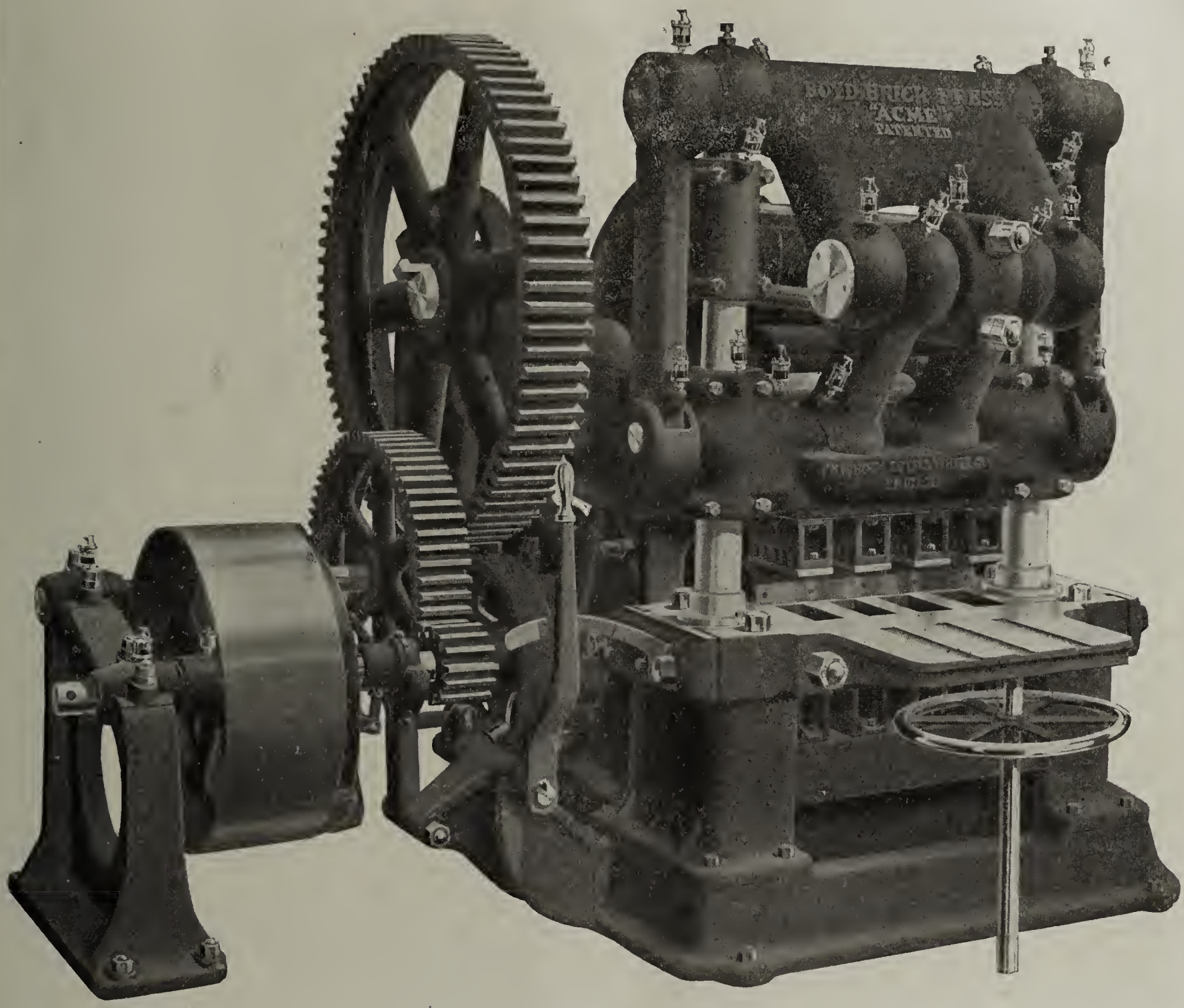
The Boyd Press has great strength and endurance, great pressure and long dwell. Boyd Presses built 20 years ago are still in use and doing good work. Brick Presses that last are the cheapest in the end.

Chisholm, Boyd & White Company

Office and Works: 57th and Wallace Streets, CHICAGO, ILL.

THE BOYD BRICK PRESS

Built in Two and Four-Mold Sizes



FOUR-MOLD "ACME"

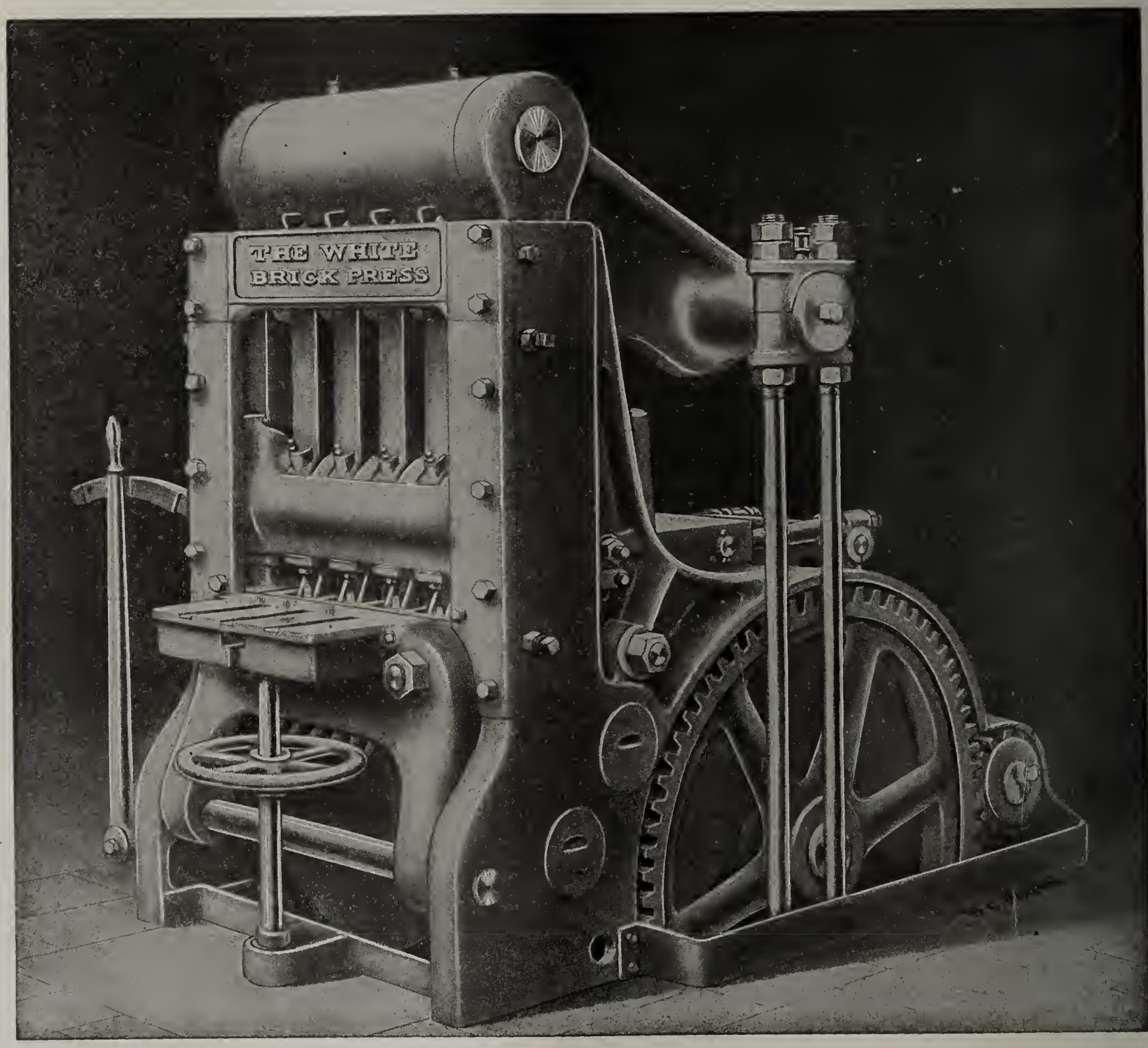
Detailed perfection, strength, endurance and quality of product have made the Boyd, the Brick Press by which all others are judged.

Write for catalogue No. 20 containing suggestions concerning the equipment of brick plants with complete plans.

CHISHOLM, BOYD & WHITE CO.

Office and Works: 57th and WALLACE STREETS CHICAGO, ILLINOIS

ALWAYS ON THE JOB
THE WHITE BRICK PRESS



When You Learn of a Breakdown on the Yard, You may be sure it is NOT the PRESS, if it is a WHITE

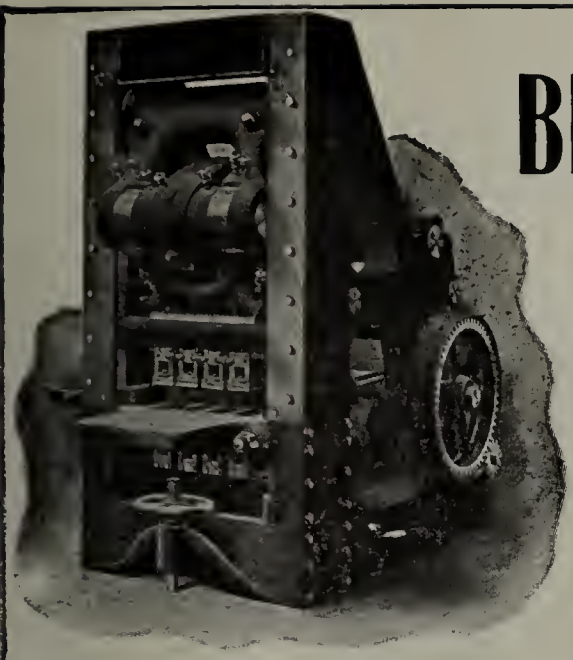
SEND FOR CATALOGUE

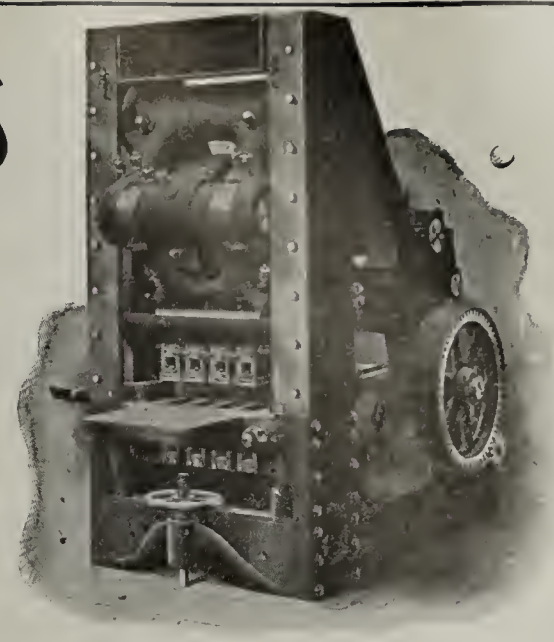
CHICAGO BRICK MACHINERY CO.

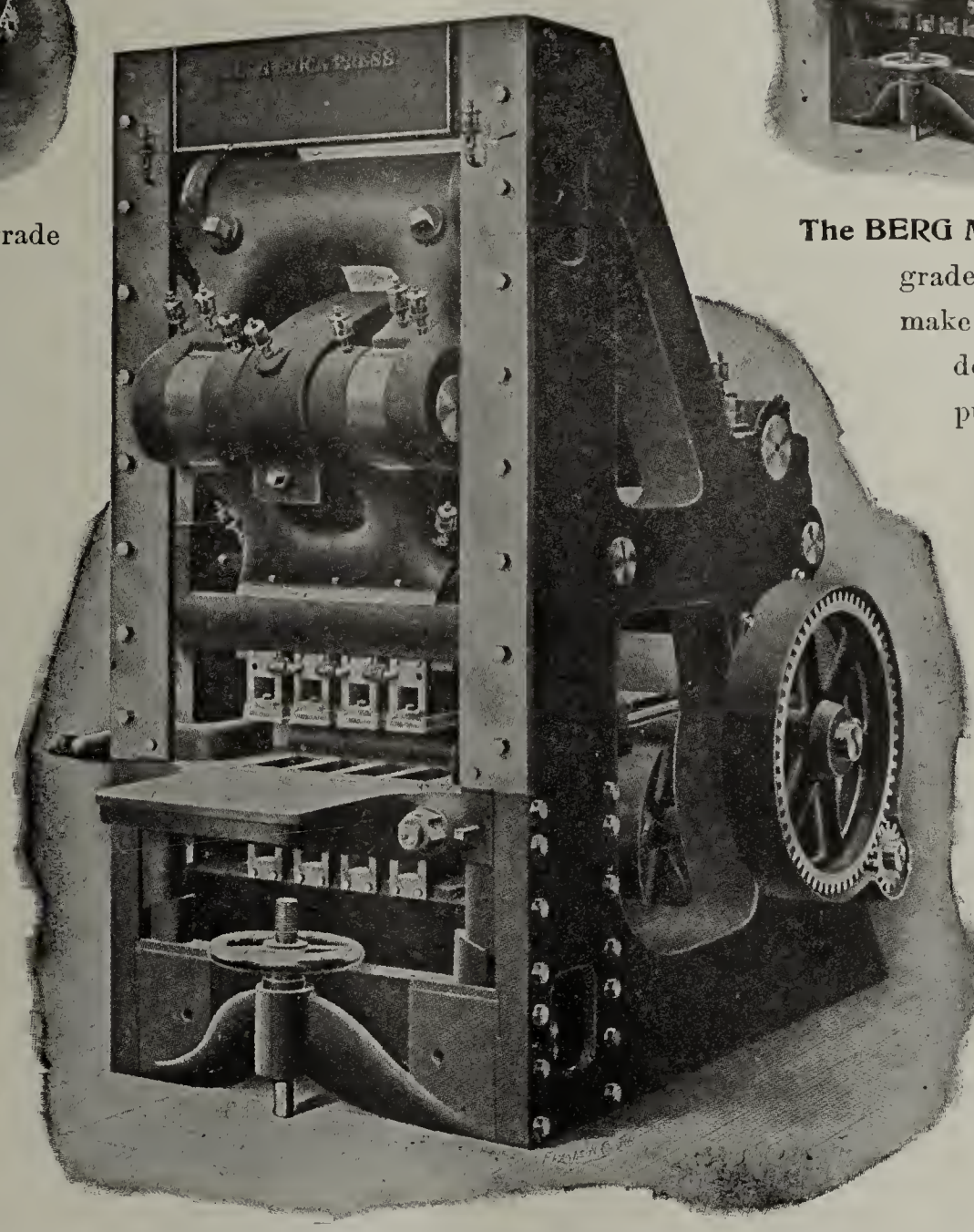
1308 GREAT NORTHERN BUILDING, CHICAGO

BERG BRICK PRESS

The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.







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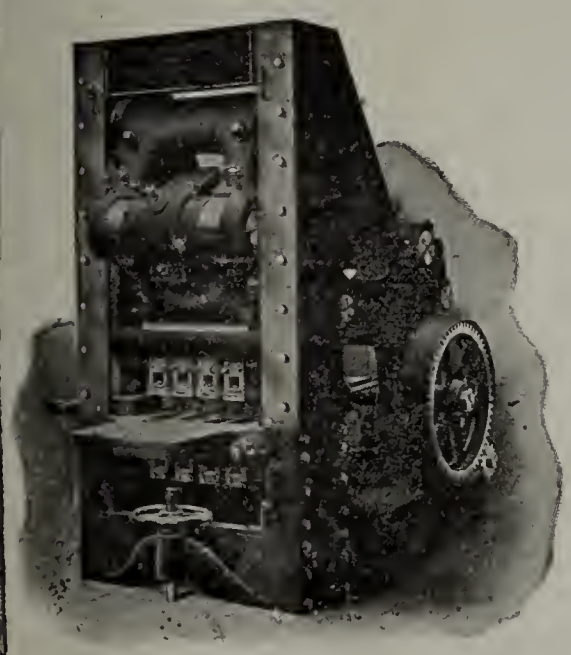

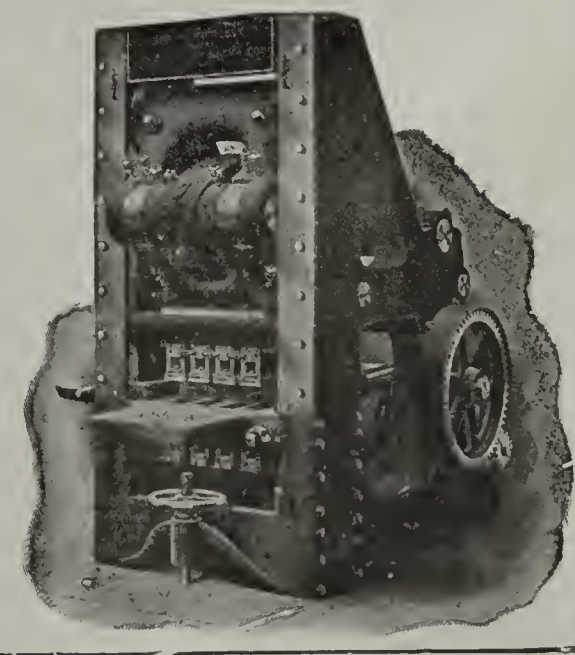

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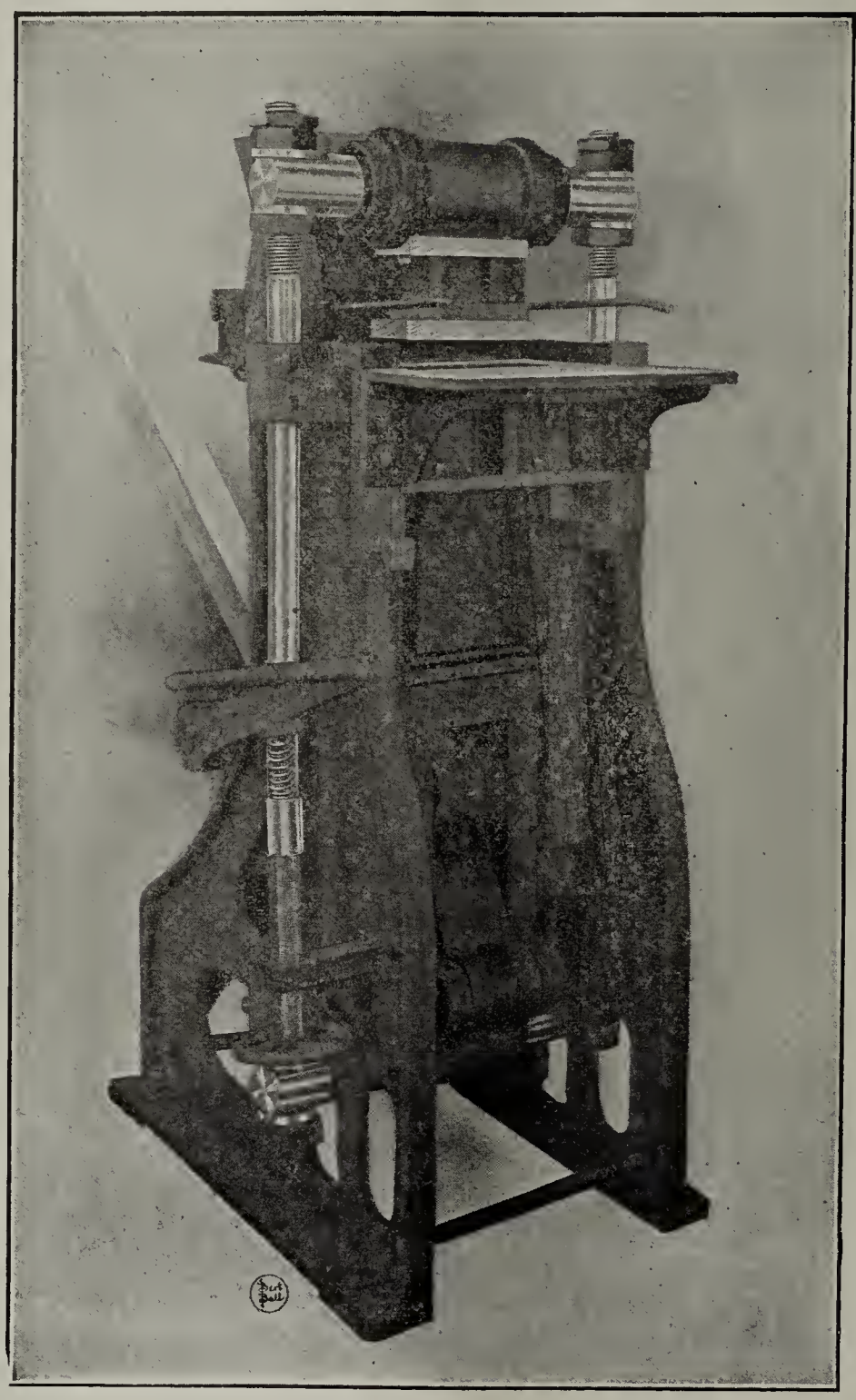

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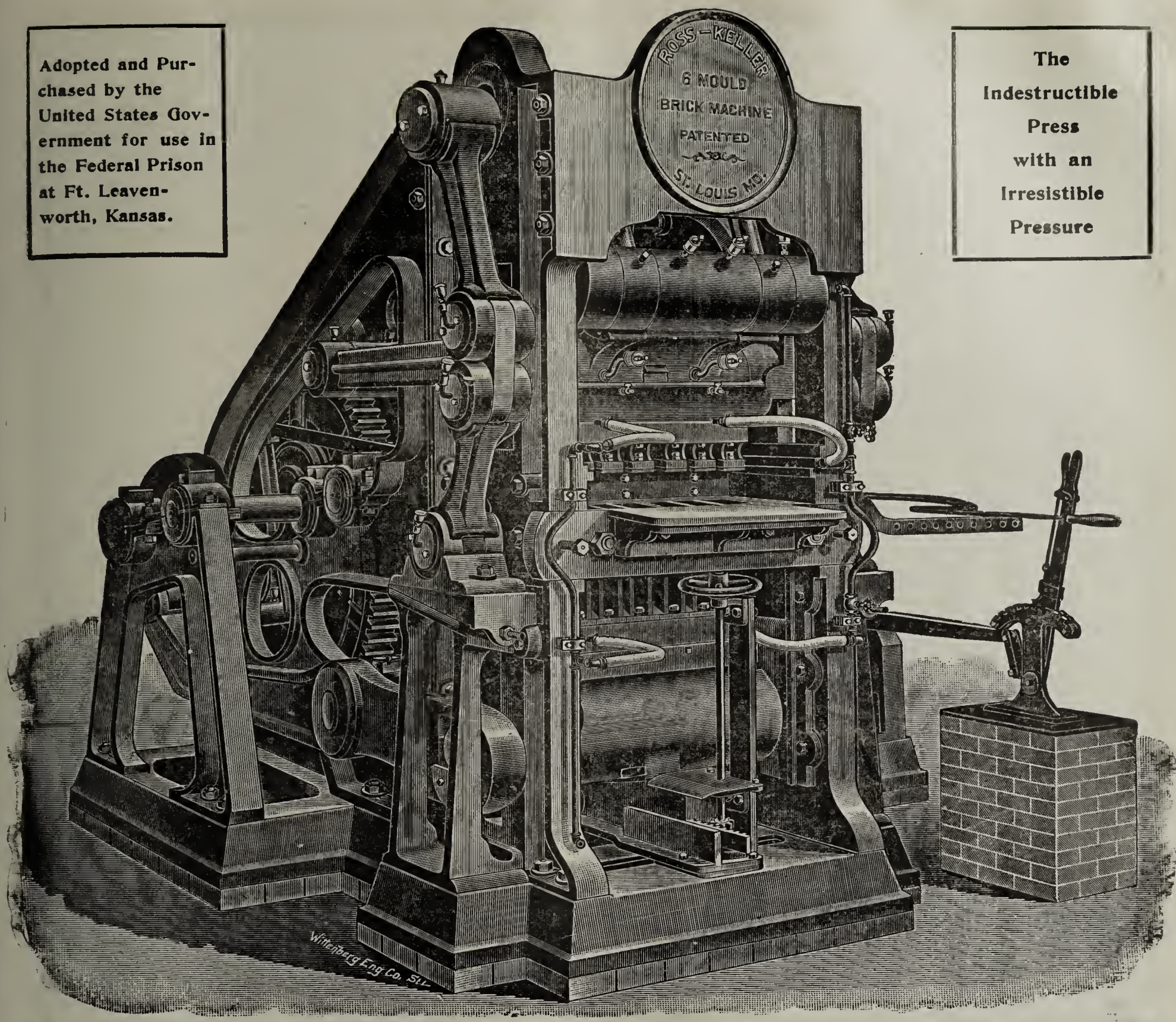

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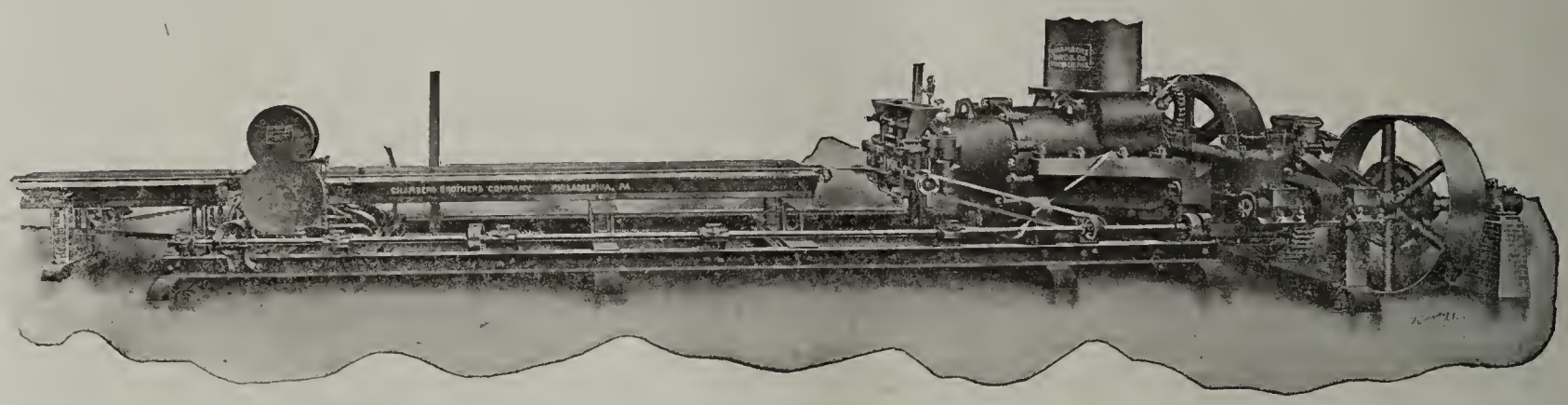

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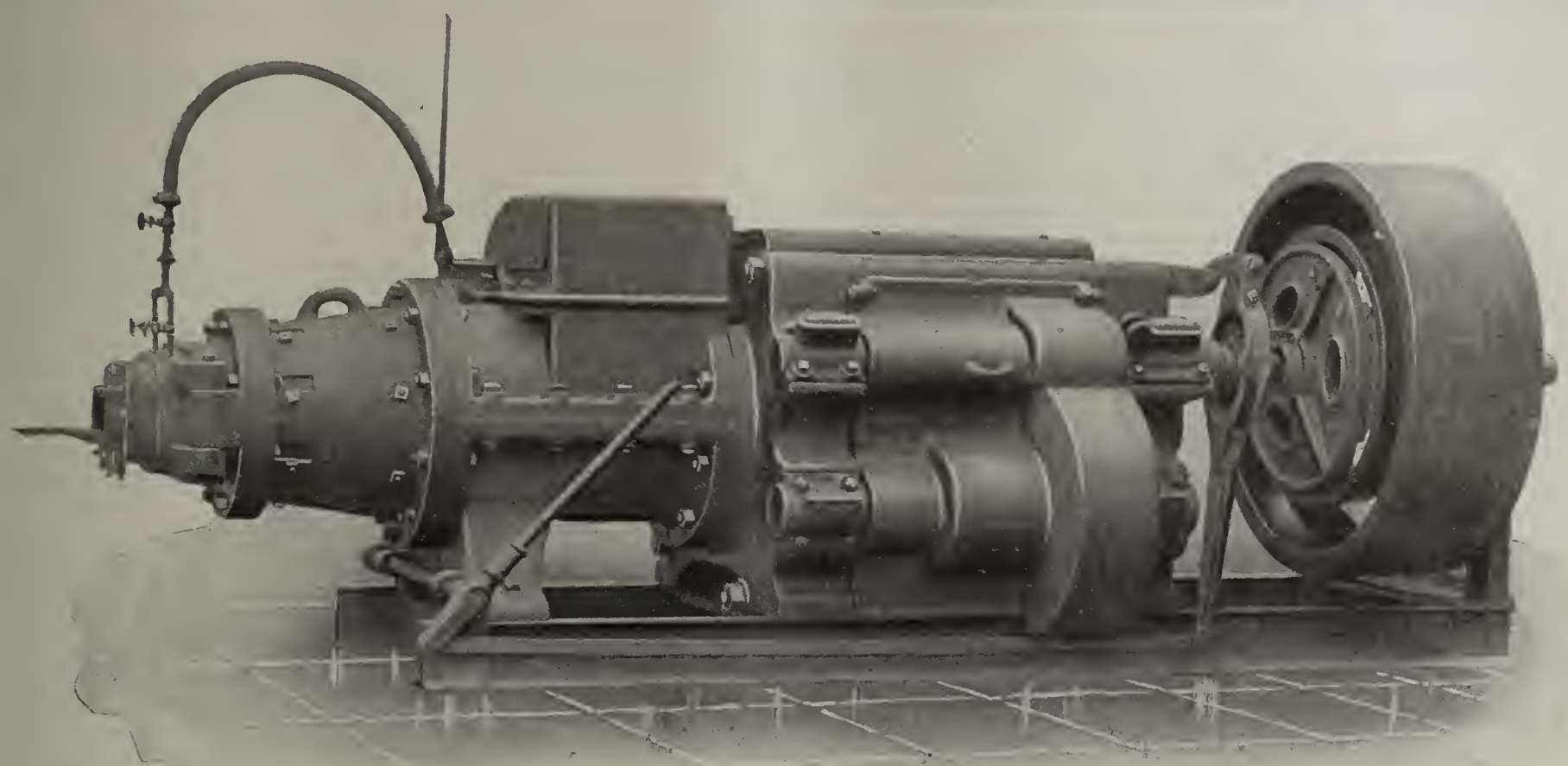

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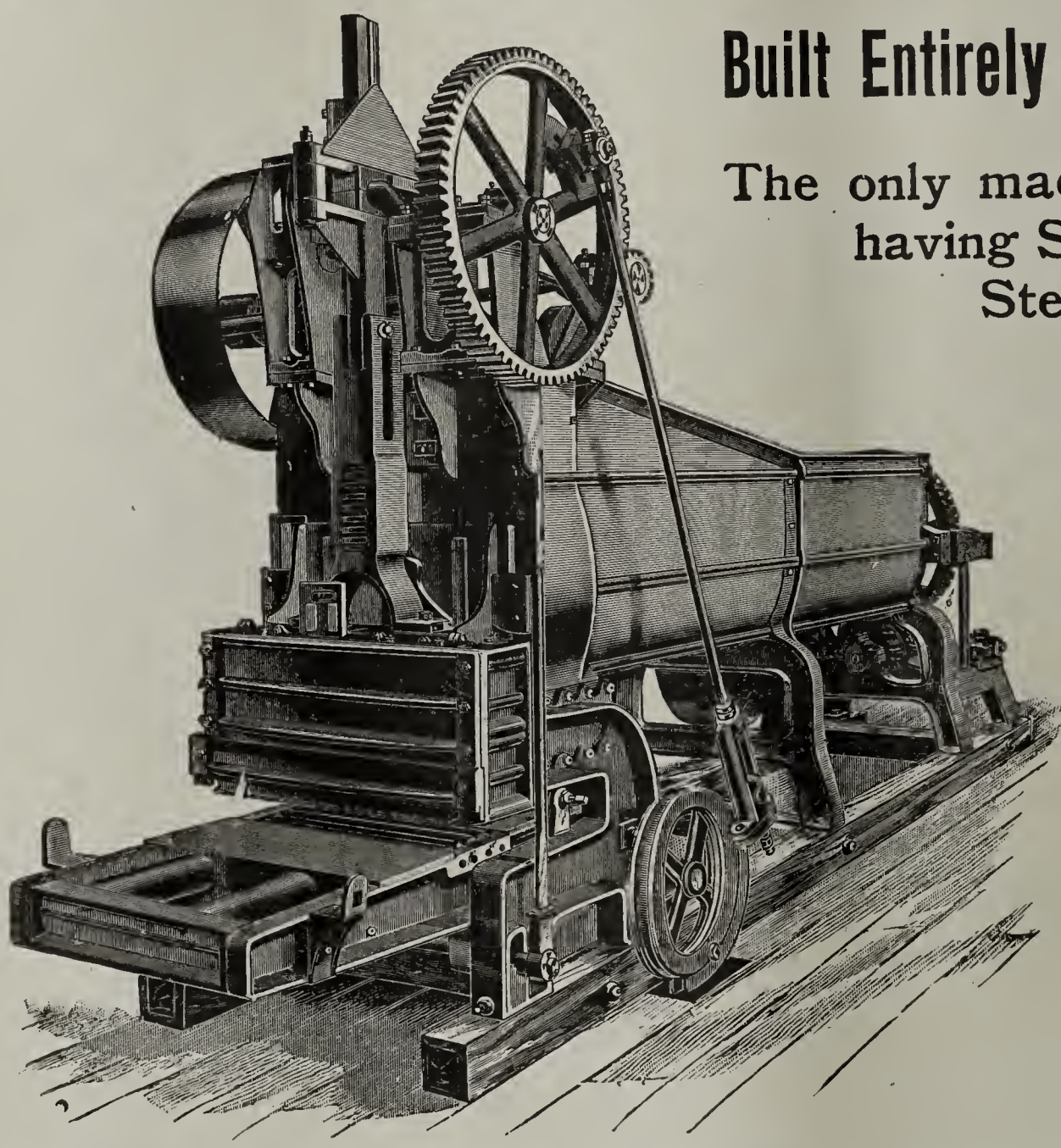

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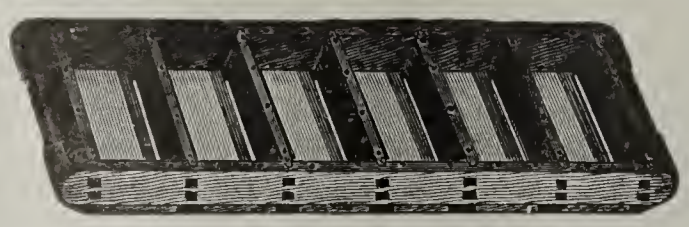

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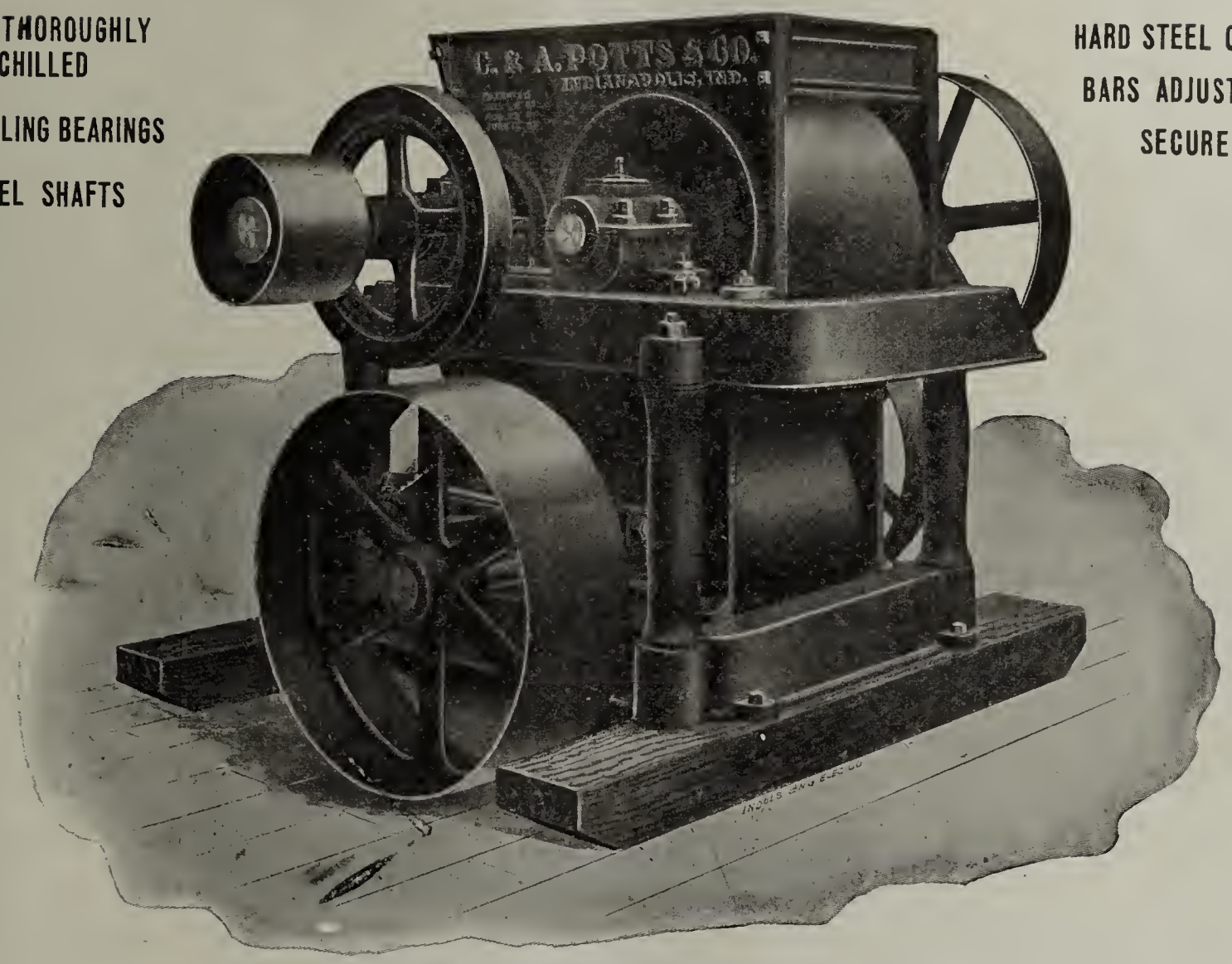

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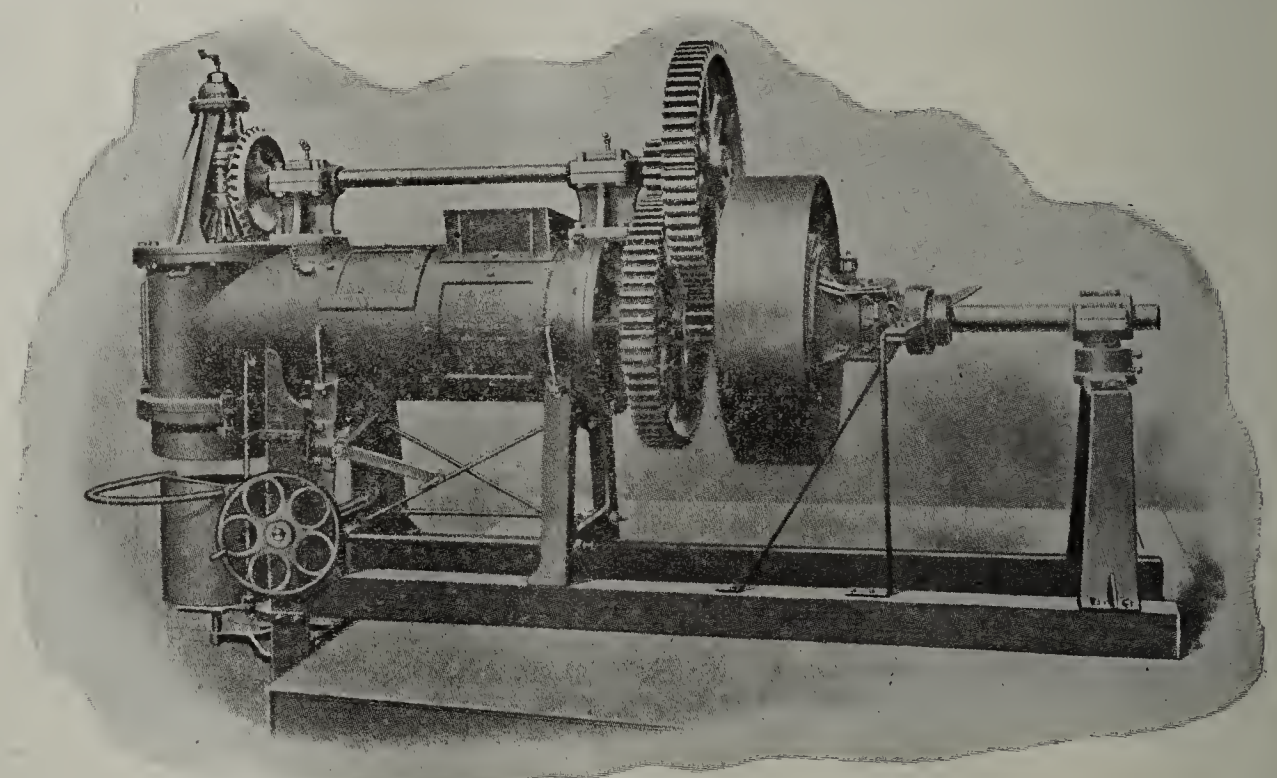

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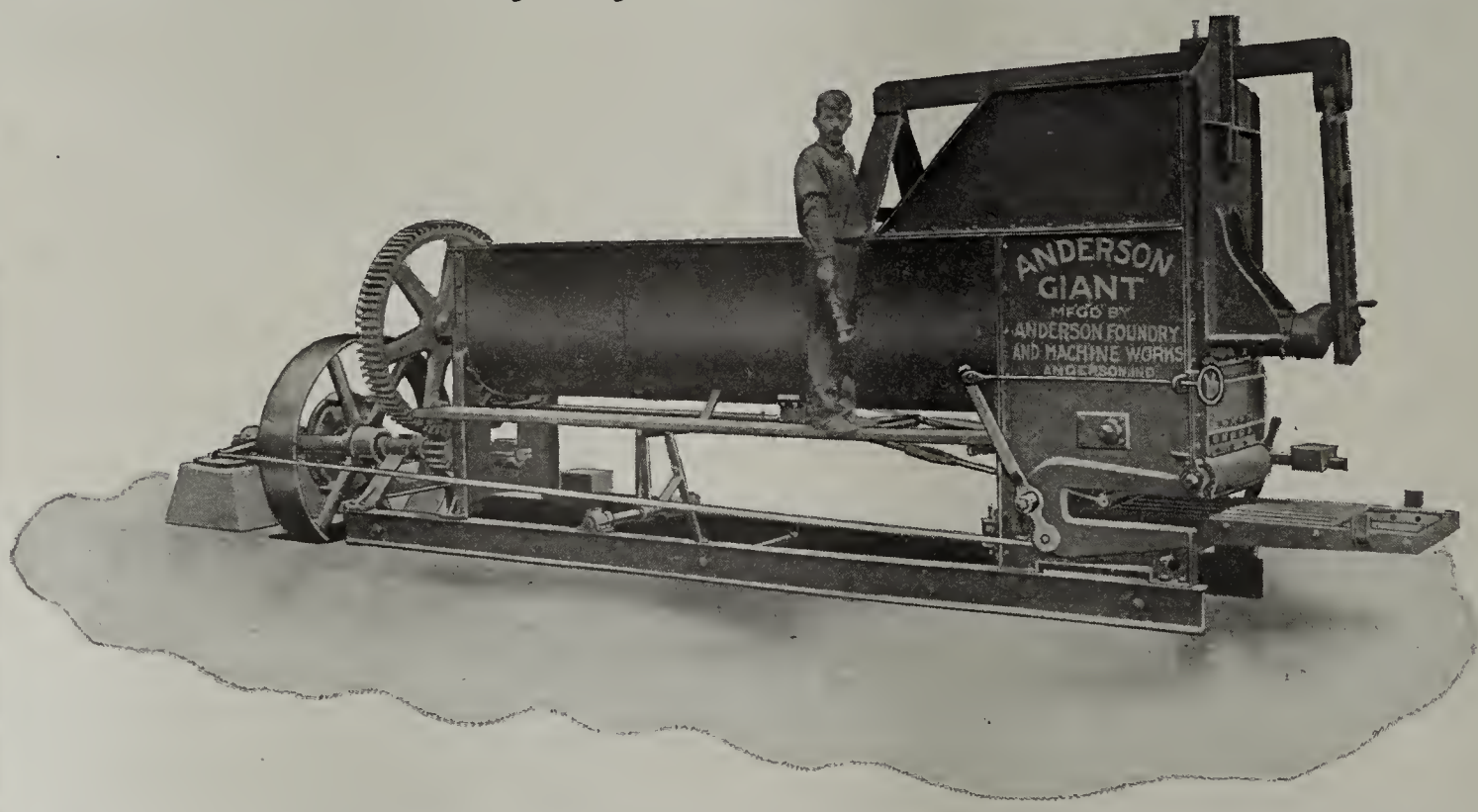

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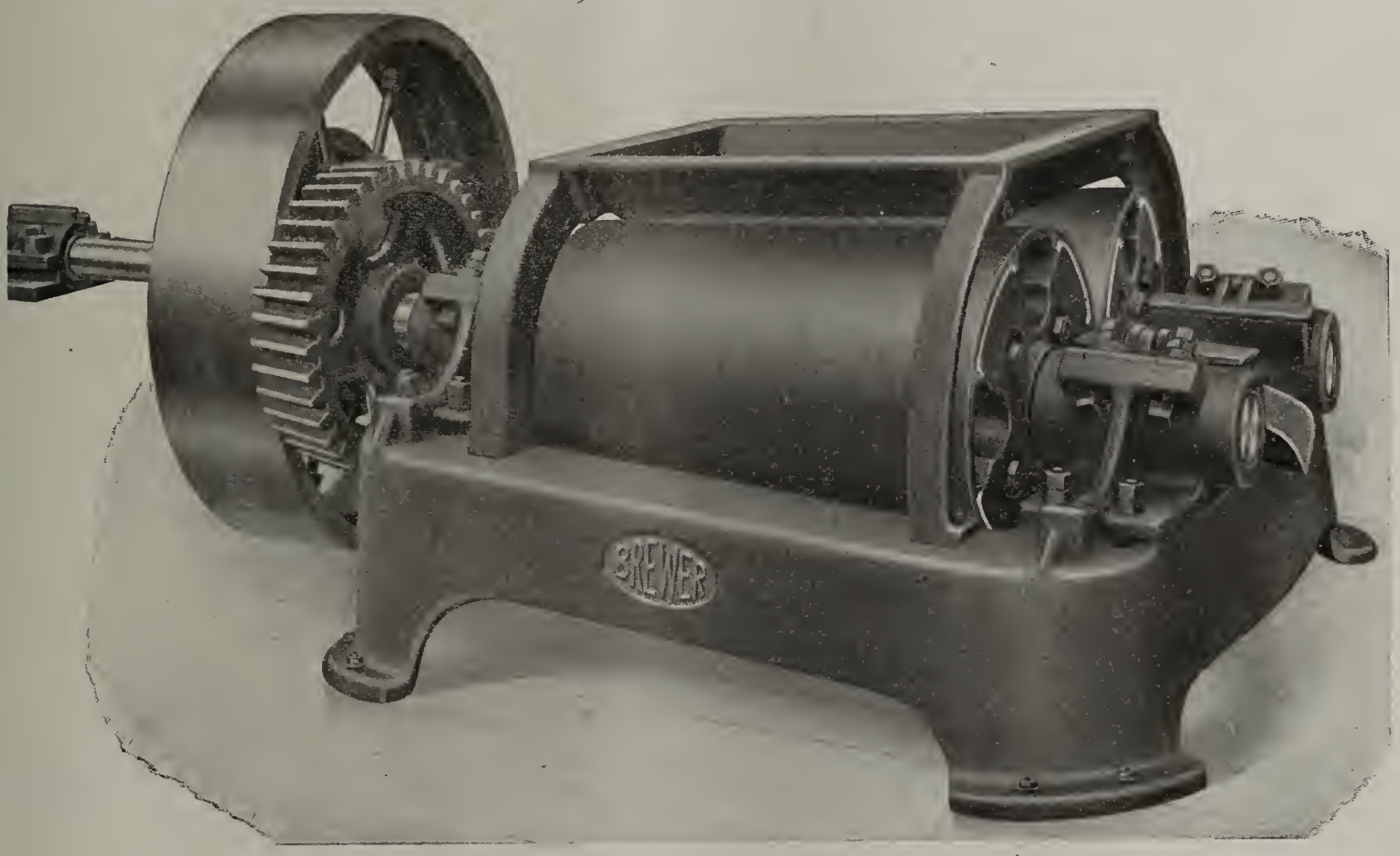

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Here is a Conical Roll Crusher, the No. 21. It weighs 6000 pounds. The rolls are 32 inches long, tapering from 22 to 18 in. diameter, and have removable white-iron shells. The gears are 5½ in. face. The journals are 12 in. long. The shafts are 4 in. diameter. No springs behind the rolls but the crushing stress is taken by draw rods which will yield before the safety of other parts is jeopardized.

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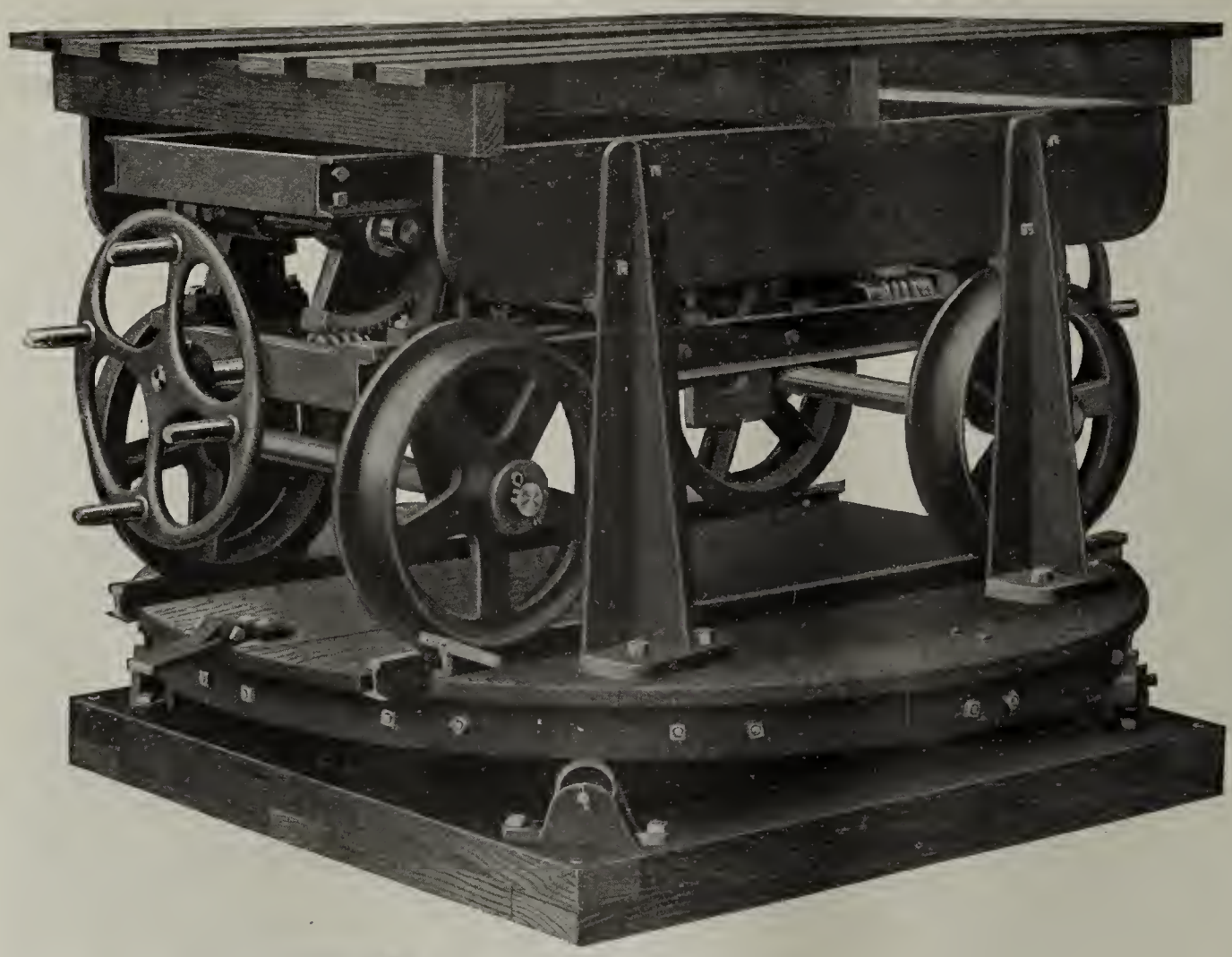

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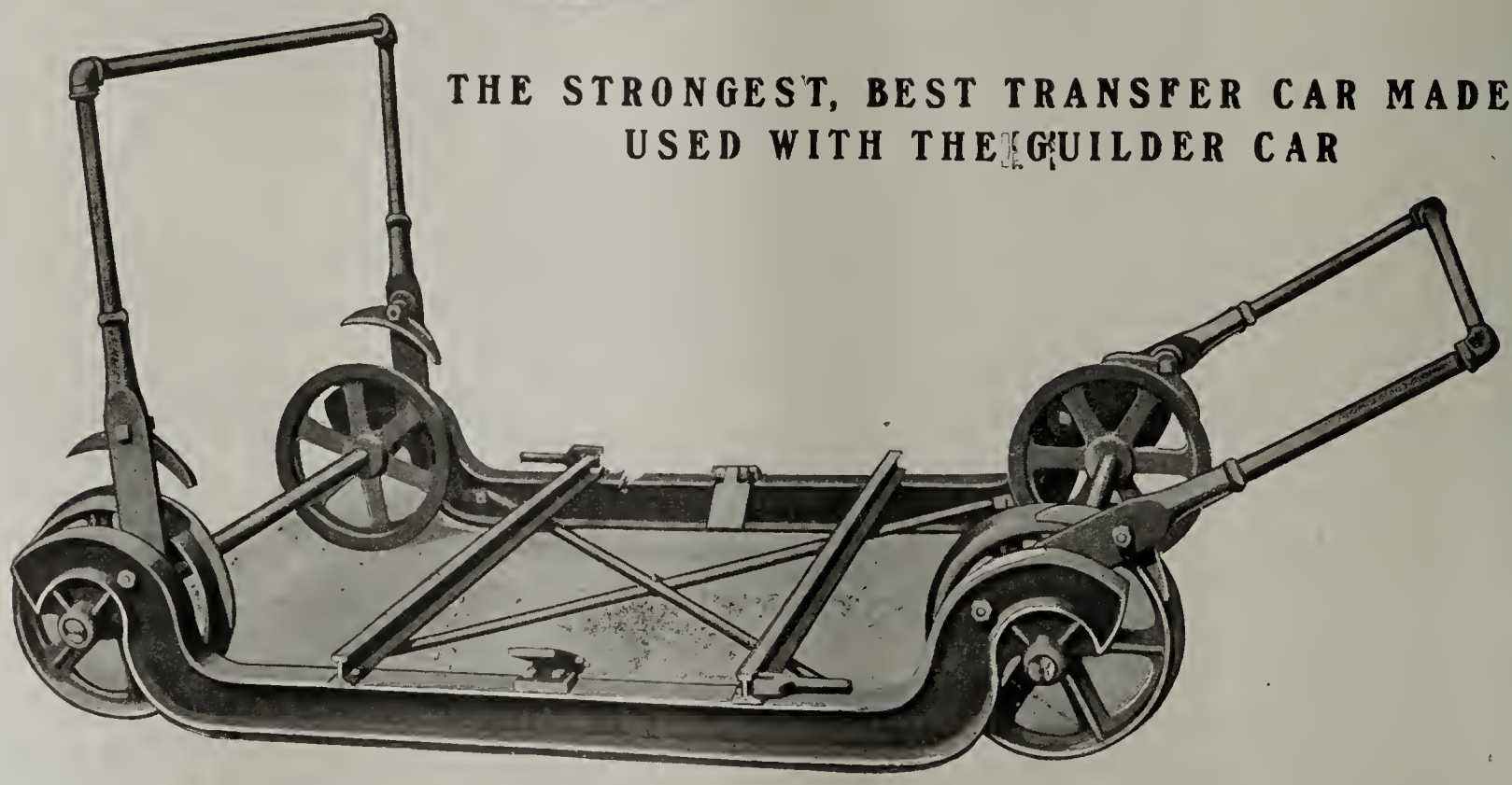


Write to the J. D. FATE CO., Plymouth, Ohio, about this system

CLAY RECORD

Entered as Second-Class Matter January 25, 1893, at the Post Office at Chicago Ill., under Act of March 3, 1879

Vol. XXXV. No. 4. CHICAGO, AUGUST 30, 1909 Semi-Monthly, $1.00 per Year
Single Copies, - 10 Cents

DETAILS OF LAYING TILE ON THE FARM

By Otto O. Uhlhorn, of Minnesota.

When one intends to do his own digging, he must prepare for a lot of hard as well as dirty work. The tools required are a tile spade, either blade or rod, a long handled shovel, a crummer, a rule, a measuring gauge, a tile hook, a mason's line and a light rope 100 or more feet long, says the August number of that old and reliable farm journal, the Orange Judd Farmer.

Most tilers work according to a line, and it is this method I wish to describe: Set the pointer on the gauge 5 feet from the bottom, if your work is 3 or 4 feet deep. Now begin at the outlet where we have station 0, which calls for a cut in ditch of 2 feet 10 inches. We drive a stout board 3 or 4 feet long and measure up from the grade stake 2 feet 2 inches, equal to the difference between 2 feet 10 inches and 5 feet and fasten the mason's line.

At station 1, which calls for a cut in ditch of 3 feet 9½ inches, we drive a similar board and measure up from the grade stake 1 foot 2½ inches and fasten the line. At station 2, which calls for a cut in ditch of 4 feet 2 inches, drive a stake and make a mark 10 inches above grade stake. These three heights should line up perfectly. When the first station is completed it is well to leave the target at station 0 to sight to, for all subsequent stations must line up perfectly, unless the grade changes.

This will give you a chance to test your survey. Stake the rope 4 to 6 inches away from the grade stakes and stretch it nice and straight along on the ground and you are ready to begin to dig. Shove the spade down its full length, push it a little forward to break the ground loose and throw out the dirt, making as few crumbs as possible. Shovel out the crumbs before the second spade is dug out. When near the bottom of the ditch dig to within a few inches of it and take out the rest with the crummer or tile scoop. With this you can make a nice groove for the tile to fit in.

TILE SHOULD FIT TIGHTLY.

Tile 7 inches or larger are generally laid by hand, and the bottom made with a pointed shovel instead of with the scoop. Lay the tile so they will fit tightly together on top, giving them an occasional firm rap, so as to drive them close together. Don't let anyone tell you that tile must be laid loose, which means open at the joints, so as to permit the entrance of water. If you do, you will be a wiser but a sadder man within a short time. Close joints will permit water to enter, but no soil, while open joints will permit both water and soil, until the tile is filled with silt, slush and mud and then the water will stay out. Your tile will not work, your land is not drained, but the money paid for laying your tile is thrown away.

Lay the tile close together, for the irregularity of the ends will leave a crack from 1-16 to ⅛ inch wide. Assuming that we are laying a 4-inch tile and that the tile is square instead of round, we have a total area in tile of 16 square inches. A crack 1-16-inch wide and 16 inches long equals 1 square inch. With 16 such squares to the rod we have a water-taking surface equal to the entire area of the tile every 16½ feet.

To protect yourself against imperfect work, in case you hire a man, you should reserve the right to inspect the work and see the tile in the ditch before they are blinded. You can then see just how the work has been done and how it will be when the ditch is filled. If there is a flaw in any tile, or a joint left open, or a hole in a tile that has not been covered with a piece of broken tile, you will see it and insist upon having it fixed before permitting the tile to be blinded. Also see whether the grade has been followed and, as a rule, any defects in the work can be detected.

Many advocate resurveying the tile after the work has been completed. To me this seems absolutely unnecessary under ordinary drainage work on the majority of farms. There may be cases where it is advisable, but these are exceptions rather than the rule. It is generally the surveyor and the tiler who advocate this method, and in the end the work is no better for it anyway.

BLINDING AN IMPORTANT JOB.

When you have inspected the tile and convinced yourself that all is right, permit the tiler to blind them. This is done by pushing the spade in the edge of the ditch, near the surface, and covering the tile with about 6 inches of coarse soil. This acts as a filter and adds greatly to the efficiency of the drain. However, each day's work should be blinded, and in case of a threatening rain the ditch should be filled in completely at intervals of 200 to 300 feet to prevent water flowing in the ditch and washing out the tile. Be fair with the tiler and inspect as often as he may require it, in order that he may blind and protect his work.

The end tile should be good and sound. Into one end wedge several pieces of broken tile, pack with coarse gravel, pieces of brick or tile bats. Lay the tile with the wedged end down stream, to hold the packing; this gives a porous opening at the end and prevents the soil from washing in.

For junctions use good, sound tile, one size larger than the main, as this will give the water currents space in which to collect. With a file or cold chisel break a hole in the middle of the tile, make a nice, round hole of the same size as the tile entering at this point, chip off the end of the branch tile, so as to fit nice and snug and have it join at an acute angle.

It is well to make a catch basin in the lowest portion of the ponds, so as to give the surplus water a chance to enter the tile readily. This is made by digging a hole down to the tile and filling it with gravel or any other porous material.

The ditch is now ready to fill, and as good a tool as I know of is an ordinary stubble plow, preferably a 14-inch, and four horses. Make a cutter for the plow of ¼x½-inch spring steel and bend so as to appear like an old-fashioned corn knife sharpened on the back and fasten to the land side near the point. You will probably bore an extra hole for this, but it will do no harm, sharpen all the way up to height of beam of plow and fasten to beam with a clamp. This will strengthen the plow and cut the sod and clods, which would otherwise clog under the beam. For an evener, use a 4x4x12 or 16 feet long, pine will do, and notch the ends bootjack fashion. Slip a log chain through this and bore a hole for a bolt small enough to go through a link in the chain. This will keep the chain in place. Fasten the other end the same way, leaving the chain a little slack. Attach the plow with a small clevis, the pin of which will go through a link of the chain. Attach a whiffletree to each end. Have a set of lines on each team and hitch the inner two horses together with a strap long enough to allow the horses to walk on the outside of the thrown-out dirt. Hitch your plow to the chain at such a place as to cut a furrow near the edge of the ditch and plow this down into the ditch on top of tile.

In coming back plow a furrow in a like manner on the opposite side. Shift your plow on the chain to where it will work best. Four furrows will in this way fill a two-spade ditch. For smoothing down the ground, the harrow pulverizer or King road drag will be found an effective tool. In seven hours I have, without any assistance, filled 5,500 feet of ditch, of which 3,700 feet were natural sod.

It is often argued that tile will not work when the ground is frozen. This is not true, and I submit herewith the dates on which we have seen our tile drains discharge water. Our drain was laid in the spring of 1905, and the ditch was filled when the job was completed. That year we had a heavy rain when the ground was frozen from 8 to 12 inches, and the tile discharged water to their full capacity just one week before Christmas. No attention was paid during 1906 and 1907. After a rain of about 24 hours' duration, the tile were flowing plumb full on February 8, 1908. March 11, the same year, was warm, the snow melted fast and at 5 p. m. the tile were flowing full. On January 23, 1909, after a few days of soft weather, our tile drain discharged water and continued to do so for a week, when cold weather set in and locked up the water in the snow. On March 3, after one day's thaw, they again began to flow and kept it up until now, May 2.

We also have two small, open ditches on our farm that were filled with snow, which prevented the water from flowing in them until March 23. These are shallow and constructed for the purpose of relieving ponds of surface water.

In summing up, it may be said that a tile drain well laid is a permanent improvement and one that never goes on strike when there is work for it, or growls because of too much work and too long hours.

The Boss system of burning brick involves the original principle of applying air under pressure. Write to John C. Boss, Munger Building, Elkhart, Ind.

HANDLING CLAY FROM BANK TO MACHINERY.

By F. R. Kanengeiser, Bessemer, Pa.

In offering to you a paper on the subject just announced, we will confine ourselves to a recital of our experience in the handling of shale for a paving block plant from its natural deposit to the ground shale, ready for the auger machine, together with what data it has been possible to gather in the short period of preparation.

The shale bank in question overlays a ledge of limestone, and varies in depth from 20 to 35 feet, the whole carrying some 5 feet of drift clay. In the center and deeper part of the bank and lying directly on top of the shale, a vein of bastard fire clay, varying in thickness from 3 to 8 feet, makes its appearance.

This bank, like practically all other shale banks, varies as to character of shale. In the center of the bank we find the hardest, most silicious shale. Near the ends, or outcrops, we find a fine, plastic weathered shale, and a gradual variation from center to ends. (We will say at this point that this whole deposit of shale has been cut into sections by glacial action, and the outcrop spoken of is the part of the deposit next to these cutouts.)

The bank which is being worked at present has been sectioned or staked off in 50-foot sections, and chemical analyses made of the drillings in all sections; these analyses, together with abrasive and absorption tests, form the basis for our mixture of shale, and permit of very intelligent handling of the same.

The practical handling of the shale bank is unquestionably familiar to all. The bank is first drilled with an ordinary well drill, which puts down a 4½-inch hole. The hole is squibbed or sprung with dynamite and then charged with black powder; the resulting shot merely shakes the bank loose and permits of much easier and faster digging. In this connection, we will say that the steam shovel in use will dig the bank without shooting, but we have always found it more economical and less troublesome to pay for the ammunition necessary to shoot the bank, rather than to give our steam shovel the extra wear and tear, coupled with the greater cost of maintenance and repairs. One shot in the bank will loosen about 1,600 tons.

The digging and loading are accomplished by a large-size steam shovel, which delivers shale to the ordinary type of side dump cars; these cars are then hauled by dinkey locomotives to their several destinations. When a shot is made, the bank loosens in such a way that the drift clay and fire clay hold together, and may then be taken down by the shovel and sent to the waste dump. In the instance under consideration shale has been delivered to two plants; at one plant all the shale was shoveled directly into the dry pans, at the other plant shale was shoveled directly into pans for about half of last year, and the remaining time shale was placed in storage and fed to the pans by belt conveyors.

The storage above mentioned is built of concrete and has the following dimensions: Three hundred feet in length, 62 feet in width, 30 feet in depth, and has a capacity of 20,000 cubic yards. The two outer and one end wall are heavy concrete retaining walls, while the other end is open to the dry pans; a chord wall runs lengthwise through the center of the storage; "I" beams spanning from wall to wall carry the overhead narrow gauge tracks, which run the full length of the storage. From these tracks shale is dumped into the storage, and may be so placed as to give the best mixture for the manufacture of paving block. At the bottom of the storage, and running the full length of the same, are four conveyor pits, covered with timber of sufficient size to

* A paper read before the Twenty-third Annual Convention of the National Brick Manufacturers' Association. Rochester, N. Y., Feb. 1-6, 1909.

carry the load of shale dumped on them. In each pit is placed a conveyor of the ordinary troughed belt conveyor type, and same is driven at a belt speed of 360 feet per minute by a sprocket chain connecting it directly to the dry pan counter shaft, so that the dry pan clutch operates pan and conveyor simultaneously. These conveyors are 312 feet center to center of drums, and carry an 18-inch belt, and the whole of the shed, including tracks, is roofed and closed on all sides, so that the shale is kept dry and free from frost.

The feeding of a conveyor, and, consequently, one pan, requires one and a third man, and consists simply of raking the shale down the slope of the 30-foot pile to an opening over the belt. If a hard nodule or other hard substance gets into the pan, a man, whose duty it is to watch for just such cases, throws the clutch of the pan, thus stopping both pan and conveyor.

The ground clay passes over piano wire screens to a conveyor, and thence to a ground clay storage of 200 cubic yards capacity, where it is ready to be drawn on for the manufacture of brick.

We have given an outline of the mechanical handling of our shale from bank to machinery, and will now endeavor to present some results of this storage and method of handling.

We find that from January 1st, 1908, to January 1st, 1909, a total of 23,712 carloads of shale was delivered to our No. 2 plant, at which place the storage is located. Each car carries an average load of 4,429 tons of shale; this, then, shows a total delivery to plant of 105,020 tons. The production of the plant for the year consumed 90,034 tons, showing a surplus of 14,986 tons. The tonnage consumed for the year shows an average consumption of 7,502 tons per month. During November and December there were twenty-four working days on which no shale was delivered, thus it will clearly be seen that the storage has practically three months' storage capacity, based on the production of 1908.

At our No. 1 plant, a similar storage is in course of construction, and when completed will hold an amount proportional to the capacity of our No. 1 plant. Thus, when both sheds are full the expense of the steam shovel, dinkeys, cars and men engaged at present the year round in handling shale, will be cut off for a period of from two to three months per year.

The shale storage in question was first used in July, 1908, and has been in continuous operation since. Now, if we take the operation of pans during the five months preceding July, namely, February, March, April, May and June, when shale was dumped at the pans and then shoveled into them, we find that 9,522,000 brick were manufactured. Four pans ground the clay and worked during this period, 4,481 hours, showing an output of 2,125 brick per pan per hour. We realize, of course, that during February and March grinding of shale fresh from the bank, full of frost and moisture, is not ideal, and that if conditions had been better the output per pan might have been greater, but we take these figures to show what was accomplished during the five months.

Now, taking the operation during the five months following July, namely, August, September, October, November and December, we find that 9,592,500 brick were manufactured, and that two pans ground all the clay. The two pans worked a total of 2,163.25 hours, showing an output of 4,434 brick per pan per hour. This shows a net gain by using storage and conveyors of 2,309 brick per pan per hour, or 108.6 per cent.

In the course of investigation, which has been carried on for a year, we obtained results which were very gratifying. Taking an average of 100 abrasive tests on paving block for the months of June and July as a basis, we found that as our mixture improved we gained in abrasive quality of block. The following data will be of interest to paving block manufacturers: The shale shed was first used in July; brick were taken from the kiln in August; forty-nine abrasive tests in August showed a gain over June and July basis of 10.74 per cent. One hundred and one tests taken in September show a gain over June and July basis of 14.58 per cent.: seventy-eight tests taken in October show a gain over June and July basis of 21.90 per cent.

As many of you know, our block have passed many city tests previous to August, 1908, so the meaning of this gain in abrasive quality must be clearly self-evident.

The shale taken from storage gives us other advantages, namely, the column on the machine works more uniformly than when clay was delivered straight from the bank, drying is more uniform; burning, settle and heats carried practically do not vary as they do with shale brought directly from the bank. The appearance of the burned block is surprisingly uniform since the installation of this storage. We will now make a brief summary and place before you the advantages of this storage in their order of importance in our judgment.

First, uniform quality is produced, making your ware strictly high-grade; second, uniform quantity of production, the importance of which we must all realize, the dry unfrozen shale in large quantity makes this production possible during the winter months; third, saving in cost of operation of steam shovel, which alone will pay good interest on the investment; fourth, saving in grinding machinery, on account of increased output of each machine, and fifth, a small saving in the cost of feeding pans.

During the latter part of the year just passed we have very materially increased our kiln capacity. During the month of January our output from one stiff mud machine has been increased 50 per cent., thus showing that the shale storage may be drawn on at will to conform to any added production within the limits of stiff mud machinery.

In conclusion, we will say that we have discovered no new methods. We have to pay money to win our shale, just as usual. We have simply enlarged others ideas, added some of our own, and put the whole to a capacity suiting our requirements, and while it costs money to equip thus, we will say that wherever a shale bank, used for paving block manufacture, varies in its block-making characteristics, the above described method will be found exceedingly efficient, and, when all costs have been summed up, the balance will be very gratifying.

PORTER BROS. BRICK CO. BRICK PLANT AT WEIRTON AGO.

The indications are that Porter Bros. & Co., of Kenilworth, Ohio, are planning the construction of a brick plant at Weirton, the new mill town of Hancock county, W. Va. The plans for the proposed brick works have been under consideration by the Porter Bros. & Co. for the past several weeks, and it is thought that the affair has reached a point where construction of the proposed concern will be started within the next few weeks. The fact that Porter Bros. would erect a brick plant at Weirton was announced several weeks ago. The intention of the company to follow out their proposed plans have been further reiterated.

Porter Bros. & Co. now operate a brick plant at Kenilworth. They are considered among the best business men in Hancock county. In fact, the senior member of the firm is one of the most philanthropic men in the country. Through his untiring efforts, the Panhandle railroad was constructed through Hancock county several years ago. In former years, John Porter was known throughout the commercial world as the "brick king."

The opportunities for a plant at Weirton are abundant. The Porter Bros. & Co. are making preparations for the construction and it is a foregone conclusion that the concern will be established.

BURNING OF CLAYS.

By W. D. Richardson, Columbus, O.

You will all agree that "burning" is too big a subject to be well handled in a single paper to be presented on an occasion like this. When I was informed that this subject had been assigned to me, and also that Prof. Bleininger would be with you to talk upon another subject, "The Preparation of Clays," I obtained permission to negotiate with him for dividing the two subjects between us, thus giving you four shorter papers in place of two long ones. My object was not to save your time nor mine, but that we might get more from Prof. Bleininger's vast store of ceramic knowledge, and that I might shift on to him the treatment of that portion of the subject of burning that I have talked of and written about so much, and upon which he is far better qualified to speak. Lest some of you may think that all of his knowledge has been obtained from books, I may say that before he went to college he was a brickburner on the paving brick plant of which I had charge, and a brickburner who not only looked after the management of the kiln, but at the same time did all the firing and the cleaning of the furnaces, work that few men of any physical powers can be hired to do nowadays. For many years before he went to college, as well as during the vacations in his college course, he did a variety of practical work on brick plants and did it well. It is largely this capacity for work and enthusiastic interest in ceramics that has brought him to the prominent position which he occupies today.

I have selected from the subject of "Burning" a few points for discussion upon which I judge that you want more information, viz.: "Selection of the Kiln," "Mistakes in Kiln Construction," "System in Burning."

You will readily see that I could give all my time to any one of these heads and then not say all that you ought to know—and I may add, all that I want to know, too, but if I can make any statements in regard to these important matters that will be helpful, directly or indirectly to the clayworkers of Wisconsin, my purpose will have been accomplished.

SELECTION OF THE KILN.

The first question to be decided in connection with the subject of the burning of the product on a new plant, or one that is to be remodelled, is what kind of a kiln should be built. The chief conditions to be determined in the choice of a kiln in any case are:

1. Character of the clay.
2. Kind of product and process of manufacture.
3. Annual output that can profitably be sold and the time in operation during the year.
4. Permanence of the business.
5. Amount of capital available for investment.
6. Size and shape of the kiln ground.
7. Method of transporting the brick to the kiln.
8. Method of delivering the burned brick.
9. Drainage of the kiln ground.
10. Character of the fuel available, and price.
11. Labor conditions.
12. Climatic conditions.
13. Sanitary requirements.

To give due weight to all of these conditions requires a thorough knowledge of the subject of kilns and burning, much practical experience and good judgment. There are so many types and forms of kilns, and so many modifications of each that can be made to meet special conditions that even the ablest engineer must study hard in order to make the best selection for his client.

One of the first things that an engineer wants to know, before designing the kiln, as well as the whole plant, is how much money is available for investment. He knows that if he designs a kiln such that the cost of construction runs away beyond the amount of money that his client has provided for the purpose, either the kiln will not be built in proper manner, or if built right the company will be involved in debt at the start. Sometimes he is deceived as to the financial conditions of his client, as they give him to understand that they want the best, and have the money to pay for it. Later the engineer is blamed for designing a kiln that they cannot build, or for running his client in debt. This is a little better, to be sure, than designing a kiln that is not adapted to the other conditions, but is nevertheless a mistake that may have serious consequences. Thus a continuous kiln, costing $20,000 to $25,000 may be very desirable for economic reasons, but if his clients have only $10,000 to $15,000 the debt may bankrupt them before they can have an opportunity to reap the benefits of the kiln.

Another factor that often determines the kind of kiln to be employed is the character of the clay, its behavior under fire, the temperature at which the desired body is obtained, the vitrification range, etc. Thus other conditions, such as small capital and limited demand may indicate the cheapest form of updraft kiln, but the high temperature at which the brick must be burned, or the margin between the temperature at which a perfect and durable body is produced and that at which the brick becomes viscous and loses form, may be so small as to make the updraft kiln impracticable. In such cases a form of down-draft kiln, adapted to these and the other requirements, should be specified.

It is self-evident that the kind of product and the process of manufacture governs to a great extent the choice of kiln. A common building brick under favorable conditions may be burned most advantageously in an open-top up-draft kiln, even without permanent walls or furnaces; but to attempt to burn paving brick, dry-press face brick, sewer pipe, drain tile or roofing tile, in such a kiln is to invite disaster. The continuous kiln in some form may be adapted to almost any product, but no single form of continuous kiln is well adapted to every clay product.

The quantity of the annual output and how much of the year the plant is to be in operation are also to be taken into consideration. The bearing that the annual output has upon the investment in the kiln has already been mentioned. A large output and steady running for nine months or more a year may make the continuous kiln, independent of other conditions, the most practicable; but if the annual output is only two or three millions of brick, or the brickmaking season only four or five months in the year, the continuous kiln, except perhaps of the cheap open-top form, would not be advisable.

Occasionally the available yard room may have a bearing upon the kiln question. Other conditions may favor the round down-draft type of kilns; but the yard room may be so limited, or of such shape as to cause the rectangular down-draft kiln or the continuous kiln to be decided upon.

Another condition that sometimes limits the design of the kiln is the drainage of the kiln grounds. The ground may be low and wet and without fall for drainage. If a down-draft or a continuous kiln is to be built upon such ground, it must be of a form that permits very shallow flues under the floor, or no underground flues at all.

The method of transporting brick to the kiln from the machine or dryer, as well as the method of delivering the burned brick, often determines the form of kiln to be built. Thus the other conditions may be such that a round down-draft kiln, with center stack, would be most suitable; but if the brick are to be taken into kiln on dryer cars the center stack is objectionable, and the kiln with a single outside stack for one or more kilns, or with multiple stacks on the kiln walls, is better.

* Read at the Wisconsin Clay Manufactures' Association Meeting.

Or if the brick are to be delivered from yard to building in wagons, it will be more economical to build a rectangular kiln, or a form of continuous kiln with doors large enough to back a wagon in for loading.

It is evident that the price of fuel and its character will often determine whether a periodical or a continuous kiln is to be used, and if the latter whether it is to be direct fired or producer-gas fired. Since a continuous kiln will require only twenty-five to fifty per cent of the fuel used in a periodical kiln, this saving of fuel where the price is high will of itself bring a fair profit to the brickmaker. In considering, however, the advantages or disadvantages of the continuous kiln, there enters into the question also in addition to the saving in fuel, labor conditions and sanitary requirements. High priced labor, or men who refuse to work in the hot chambers of the continuous kiln, may cause a decision to be made in favor of the periodical kiln. The greatest advantage of the continuous kiln is derived where labor is cheap and fuel dear; though the continuous kiln is favorable to modification to adapt it to almost any condition.

Climatic conditions effect the choice of a kiln in two ways. In the first place the climate may be such that brick can be made only a few months in the year. This would generally mean that the investment in kiln should not be too high. Another influence in climate may be to make the work in the chambers of a continuous kiln uncomfortable if not unhealthy; yet continuous kilns are now found in all parts of the world.

Enough has been said to make it clear that the selection of the best kiln for any special conditions or purposes is not an easy matter, but requires all the knowledge that one's own experience furnishes and as much as can be obtained from the experience of others, since any man's experience must necessarily be limited. The advice generally given in Europe and that is becoming more frequent in this country, is to consult a competent engineer of special knowledge and experience in the manufacture of clay products. If he is the right man he will save you money and worry, and perhaps a business failure.

MISTAKES IN KILN CONSTRUCTION.

Not only must a type and form of kiln be selected that is best adapted to the special conditions and purposes, but the kiln must be properly designed and constructed. The designing of the kiln, the proper form and proportion of all of its parts, based upon accurate calculation of all dimensions, is a subject for the engineer. We will only consider the construction of the kiln after the proper type and form has been determined, and such kiln has been properly designed—the drawing and specifications having been prepared in more or less detail.

The construction of the kiln has a wider interest for brickmakers since so many of them build kilns without having any well-developed plans or specifications, and often make some serious mistakes. The mistakes in kiln construction that are most commonly seen will be briefly discussed.

The most serious mistake in kiln construction is generally made at the beginning, in not providing proper drainage of the kiln ground, and proper insulation of the kiln bottom from ground moisture. Most brickmakers can see that the kiln ground should be so drained as not to allow rain to flood the kiln bottom; but few can be impressed with the importance of thoroughly insulating the kiln bottom from ground moisture. They do not easily comprehend that a wet bottom or one from which water is being evaporated, is always a cold bottom, and that a cold bottom means poor draft; that the brick in the kiln or near the floor cannot be raised to a sufficiently high temperature until the flues and flue walls underneath are at a high heat from top to bottom, and that these flues cannot attain a high temperature until all the moisture has been evaporated from them and from the kiln ground for several feet below. This means in all cases longer time burning and a large preventable loss of fuel in evaporating the ground moisture, and in some cases also soft or shaky and non-ringing brick in the lower part of the kiln. The kiln ground should be excavated to a sufficient depth below the foundation walls to permit of a coarse filling of boulders or a series of brick flues to be laid over the whole bottom from outside to outside of walls. From this drainage bottom there should be conducted drain-tile or sewer-pipe drains leading to the main drains of the yard. On top of this there should be cement concrete of sufficient thickness and strength to form a firm bearing for the superstructure. The top of this concrete should have a layer of strong cement mortar to prevent, as far as possible, the moisture coming up through it. On top of this cement there should be a few inches of fine damp clay, well tamped down to an even hard surface. On top of this clay there should be two to four inches of sand upon which to lay the brick pavement that forms the bottom of the flue. Better bottoms than this can be made, but we would be satisfied if we could secure as good construction as this in all of our kilns.

Another mistake is the using of too poor materials in the wall. Brick makers often seem to think that any old rubbish is good enough for kilns. It is true that in some places soft bricks and over-burned bricks and bats can be used without detriment, but it is also true that it pays to build kiln-walls well. A well-bonded wall of hard-burned brick will not only last longer, but will cost much less for repairs and will not cause the waste of heat and checking of draft from cracked, leaky walls. Soft bricks in the outside walls that soon begin to crumble are not only an eyesore and a damaging advertisement of brick, but may seriously lessen the efficiency and durability of the kiln.

A poor grade of fire brick in the furnaces and furnace throats is false economy, necessitating frequent repairs, perhaps at a time when the kiln is needed for regular work. No fire brick for lining the walls or for the crown may in some cases be advisable, but is generally a mistake.

Common brick, even for outside kiln walls, are sometimes laid up in clay mortar instead of in cement or lime-cement mortar. This makes a weak wall which is soon pushed out of place and leaks air badly. Fire brick are sometimes laid up in common clay mortar instead of in fire-clay mortar. The common clay fuses and damages the fire brick and prevents their being used again when repairs or removal becomes necessary. Fire brick should be laid with thin mortar joints, just enough fire clay being used to bed the brick.

The effects of poor bonding of the brick work in kiln construction are often evident in the cracking of the walls and the pulling away of the outside stretcher courses between the headers. Every third course across the wall should be headers, or the wall should be laid in Flemish bond throughout. The latter requires common brick and fire brick to be of nearly the same thickness. One large brick company which has been in the business for more than half a century, and which expects to continue at the same place indefinitely, lay up all of their kiln walls in Flemish bond and make a common brick of special thickness to bond with the fire brick. In round kilns it is permissible to lay up a nine-inch fire brick lining without bonding to the outer walls; but a well-bonded wall is best. In the straight wall of the rectangular kiln it is a mistake not to bond the whole wall together in the manner specified.

kilns are too thin. The amount of heat lost by radiation

A mistake that is commonly made also is that the walls of through walls, especially in cold weather, is enormous. Kiln crowns also are often left uncovered, a single course of brick on end, exposed to the cold air and carrying away the heat from the kiln. The first cost in construction is reduced at the after-expense of many times the amount in increased

fuel bills. Thin walls, properly braced, and the cracks daubed will stand a long time; but the operation of such kilns is a heavy charge on production cost. Solid kiln walls should never be less than three brick, and the hubs not less than five bricks thick. Kiln crowns should be covered with a course of common brick laid on a layer of loam, and the top covered with sand, or if left uncovered and without roof, given a coat of thin cement wash before each filling of the kiln.

The bracing of the kiln walls is often improperly done, causing much damage and after expense. A round kiln is easily braced by bands, and even if done improperly may not cause serious damage for some time; but a rectangular kiln, if not properly braced, had better not have been built at all, as it is a waste of money.

Bottom flues and floor supports are sometimes built on soft or filled ground, but after the first burn the settle necessitates a re-laying of the floor; or the flue walls are sometimes built of soft-burned brick that shrink at every burn; or with thick mortar joints that cause the same trouble. Flue walls or feather walls, or any walls supporting the floor of a brick kiln should be built upon a solid foundation, and of hard burned brick laid in thin mortar joints.

Kiln stacks also are often improperly constructed, and upon poor foundations, the walls of poor material, improperly bonded and without an air space, causing a cracking of the walls and a reduction of the inside temperature, which means a reduction of the draft power of the stack. The most serious mistakes in stacks are in an improper design; but even a well-designed stack may have its efficiency and durability seriously damaged by improper construction.

Now I realize that financial conditions may be such that good construction of kiln is out of the question, and that a man must cut according to his cloth. I have seen round down-draft kilns, 26 to 28 feet in diameter, built at a total cost for labor and material, exclusive of the brick made on the yard, of $125 to $150. This was in a southern city, all of the brick being laid in common clay mortar by common negro labor. The bracing was done with second-hand wire cable, over vertical strips of old wagon tires and other scrap. The kilns were built rapidly and served their purpose. The last time I saw them they had been in operation over a year, burning dry-pressed face brick. This could not under the circumstances be considered improper construction, since these kilns gave far better results for their brick than the up-draft kilns, and enabled the proprietors to do a business that they could not otherwise have done.

SYSTEM IN BURNING.

It is now quite generally recognized that system is a necessary element of success in any line of endeavor. System is as applicable to all of the operations of a clayworking plant as to any other manufacturing or commercial establishment. No operation in the manufacture of a clay product needs the application of system more than that of the burning. Even an indifferent system is better than no system at all. Operations conducted systematically are productive of improvement, but a "hit-or-miss" "take-your-chance" method gives uncertain results and makes no positive advance. A method of burning that is empirical, that has come to a man by tradition or by the constant use of his senses in this special work, may develop a skill that is productive of excellent results; but such individual skill does not advance the general knowledge of burning, and dependence upon such a burner is always attended with risk and anxiety, since his absence from any cause puts this critical operation in the hands of those who may have neither skill nor knowledge. Moreover, such a burner is generally successful only under conditions to which he has become accustomed; but a change of clay, fuel or kilns may upset his calculations and put him at sea. Is it not true that the average brick burner is wasteful of time and fuel, and never certain of duplicating any desired results? Is it not discreditable to our art that success or failure is so often dependent upon the results of an operation that is in the hands of a man who has little definite positive knowledge of the principles underlying it and who has no systematic method of attacking the many problems that arise, but who works by guess or by "rule of thumb?"

It is the desire and aim of every manufacturer of clay products to get the best possible results from the burning, to get the highest possible percentage of first quality ware with the least possible expenditure of time, labor and fuel; but is he going about the attainment of this in a systematic manner, or does he hire the best burner that comes along and leave all in his hands?

The establishment of system in burning requires careful forethought and a well-developed plan of securing data of all conditions, and of making regular observations of the progress of the kiln, the effect of the fires upon the wares and a systematic record of such facts, careful comparison with previous records, and the making of deductions therefrom for improvement. It is not within the province of this paper to describe the various means of ascertaining the progress of the action of the fires, the conditions of the kiln, etc., though it must be said that little can be accomplished in securing facts for record without proper apparatus for making tests and observation. It is assumed that every manufacturer who wants to reduce his burning to a system will appreciate the value of every means to secure this. It will also be assumed that Prof. Bleininger has or will describe and explain the use of such apparatus as is most practical for the purpose, and that this apparatus is in your hands. It is evident, however, that the possession and use of this apparatus does not necessarily mean that the burning is being systematized, but that an important step has been taken for securing this.

The systematizing of the burning consists of the following operations:

1. Securing of the data by means of a series of daily report cards upon which are placed the readings of all the controlling apparatus, the measurements of settle, amount of fuel used, etc., and all observations of the condition of the kiln and the progress of the burning.

2. The recording of the information on these report cards in permanent form in books specially prepared for the purpose, which books shall also contain all data in regard to setting, cooling, emptying, repairs, etc., with calculations of the cost of each operation and the percentages of the different grades of ware.

3. Comparison of results, firing conditions and progress made, with records of previous burns.

4. Deductions made from comparisons.

The primary object of these records is improvement—better quality of ware, less expense for labor and fuel, and the reduction of the whole operation of burning to a system that can be carried out at any time by any one from an examination of the records. Such records become the property of the man or company owning the plant and are a valuable asset for the conducting of the business. The manager is by such means made independent of the arbitrary action of a burner, and is relieved of anxiety as to the burner becoming ill or throwing up his job. Where a complete set of records is kept in this manner any desired result may be duplicated at will, whether the same or a different man be in charge of the burning. It is only by such a system that this most important operation in the manufacture of clay products can be placed under control and positive, definite results assured.

HOW THE MODERN PRODUCTION OF THE BRICK KILN IS RECOVERING FROM THE BLIGHT OF PERFECTION.

Some interesting things are said in the August Craftsman about the recent revival of some old fashions in the making and laying of brick, and about the increased interest shown nowadays in that humble material and its artistic possibilities. Brick has been treated very badly, there is no denying it. It has been looked upon as a base and vulgar material fit only for the plainest of utilitarian purposes. Even for dwelling houses it has been disliked by a good many people because of an ill reputation for dampness—an objection by the way, which thorough drainage soon disposes of. For public buildings it has been thought too common and unimpressive—a cheap substitute for stone to be resorted to only in case of lack of money for marble or granite. This mean conception of brick has not been held by those who have carefully studied the splendid things done with it in past times, but it has been very prevalent, and the Craftsman undertakes to explain how it came about.

It was in the Victorian era, according to this view, that the "blight of perfection" overtook brickwork and everything else. America suffered most because of greater addiction to machine methods and machine ideals: "Our pictures and our sculptures became the slickest (to use a good old Yankee word) most highly polished exhibition of trivial imitation; our houses inside and out were overfinished and overfurnished and without personal interest; our clothes were all an overfine imitation of something we thought better; our woods were varnished and veneered out of all beauty and naturalness; our bricks were pointed or hidden under smooth cement, and so on through every last ramification of our artificial, highly polished, disingenuous civilization." As for brick, the ideal came to be something that should be as smooth as marble. Till the Victorian era bricks had been hand made and irregular in size, shape and color; with the advent of machinery they became uniform in size and shape, and the edges were made sharp and the corners square. To secure perfect uniformity of color, they were carefully sorted after they were burned. When a wall was laid, as evenly as possible and with narrow joints of fine mortar the surface was scoured smooth with a soft brick, and joints could be neatly indicated by mathematically accurate stripes of black or white paint. Later, in the pressed brick era, so beautifully smooth and regular a product was put on the market that scouring was unnecessary. "These bricks were laid close together and joined with a mortar colored to match. The result resembled nothing so much as a sheet of tin painted red; every inch was exactly like every other inch. In looking at it the eyesight went sprawling over the surface like a dog on slippery ice."

It was in a very different way that the beautiful brickwork of the past was done. Brick has from necessity or choice been the characteristic material of various schools of architecture. In some cases, to be sure, notably during the Roman empire, it was often treated as a mere foundation on which to lay a fine white stucco, and no special attempt at beauty of surface was made in putting the brick in place. But where the brick has been the external material it has been used frankly for what it is, with no effort to polish it into the semblance of something better. On the contrary, variety and interest of surface has been sought—sometimes by rough, homely irregularity, sometimes by picturesque patterns in color, sometimes by combining brick with other material, as in the Persian architecture early in the christian era, where the bricks are used as a matrix in which to set glazed tiles. In Italy in the middle ages beautiful patterns were made in brick, as in a Bologna church, where "the bricks are set in every conceivable fashion even with the angle of the head turned out, which makes them resemble a beading. The tiles inlaid are smooth and unglazed, in white or dull colors that blend with the red-brown bricks in the field of the wall."

Of course for work of this kind the artist's eye and hand must be present at every point, and in modern times, unluckily, the artist's province has usually stopped with the designing of a building, the erection of a wall, for example, being made as mechanical a process as possible and intrusted to workmen with skill in the technic of their craft, but with no artistic training. It was the late Stanford White who discovered the great possibilities of the strange rich violets and blues and dull deep purples in the overburned bricks which had been discarded, and which he got for a song till manufacturers began to see the decorative work he did with them. It will very likely be some time before brick is rated at its true value by the public, which thinks of it as a plain and even ugly material, and is quite justified in that view so far as the common use made of it in this country is concerned. Nevertheless, its possibilities are increasingly appreciated by architects and by students of art, and it is to be hoped that the interest of experimenting with it will lead to some happy results.

As a utilitarian materal, as is well recognized, brick can hardly be surpassed. In fireproof qualities it surpasses any kind of stone, and in endurance it is almost unequaled; even very thin walls of good brick have lasted from ancient times almost uninjured, if not harmed by war or earthquake. And on the artistic side, if brick lacks the serene majesty of Greek marble and the rugged strength (or semblance of it) found in granite, it has qualities of its own which are immensely valuable. It is a pity to see a fetish made of stone; part of the money which Americans are ready to lavish on the finest materials might well go toward a more beautiful architecture and workmanship in plainer stuff. But it is much harder, unluckily, to raise money for workmanship and artistic talent than for raw material. Public sentiment would still rather have a plain marble wall than spend a like sum for the designing and execution of a beautiful effect in bricks. It may be quite as durable and much more interesting, but there is apt to be a feeling that it is extravagant, while the marble, being put in place as cheaply as possible, is a sound permanent investment. The feeling is due, of course, to valuing costly materials above artistic skill, a fallacy which it is to be hoped the renaissance in brick work which the Craftsman describes will do something to dispel.

SECRET FORMULA DISCOVERED BY MEN CONNECTED WITH LIBBY COMPANY.

Toledo, Ohio, is to be the home of another industry connected with the glass trade.

A new concern, called the Buckeye Clay Pot Co., has just been launched with a capital of $100,000 and is backed financially by S. O. Richardson, Jr., M. J. Owens and others heavily interested in the glass business in Toledo.

The company will make pots, tanks, blocks and all sorts of refractory supplies for glass factories from a secret formula discovered by Wm. Brownee and A. Zopfi, who are connected with the Libby Glass Co., and who have been for some time at work on the process.

It is said that these two discoverers have finally succeeded in evolving something that has long been wanted in the glass making business. The new pots, it is understood, are a wonderful improvement over those now in use both as to strength and length of life. The new company expects to supply all the glass factories in the country with pots from the new process.

It has not yet been decided where the new plant will be located other than that it will be built in Toledo and probably near the Libby glass factory.

A KANSAS MANUFACTURER SAYS BRICK MAKING IN THE MID-CONTINENT FIELD OFFERS THE BIGGEST MONEY MAKING OPPORTUNITY IN THE UNITED STATES TODAY.

If the reader has ever paid any attention to the brands on the brick in the sidewalks in a good share of the towns of Kansas, he will probably remember that on the brick made by the Coffeyville Vitrified Brick & Tile Company the "&" character is made backwards. Now that does not mean much to the fellow who notices it in Kansas, but suppose you were over in Australia and saw brick bearing that mark. It would mean a great deal to you, wouldn't it? A Kansas man who recently returned from a trip to Australia reports having seen that old familiar brand of brick over there, and that it was the only thing he say from Kansas.

Even in our own and the adjoining states the vitrified brick has been the means of giving a knowledge of Coffeyville to people who probably never heard of that place in any other connection, unless it was as the place where the Dalton brothers were killed, says the Topeka Capital.

And Coffeyville is not the only Kansas town for which the brick industry has done so much, although it was at Coffeyville that the pioneer shale brick company of this country was established.

Therefore, when you saw a brick it was a "mud brick," made of clay and very likely molded by a process almost as crude when compared with the methods of today as would be the straw and mud process by which the children of Israel made brick for the Pharaohs. But now you will scarcely ever see a mud brick in this western country, even among the class of brick known as common builders, and the old-fashioned people who shaved dust off a brick to polish their table knives would scarcely be able to find a suitably soft brick anywhere except among the debris from some old building or chimney.

The modern brick, especially in the west, whether for building, sidewalk or paving purposes is the shale brick, harder and heavier than the old brick and a dozen of them will not absorb as much water as one of the old kind, hence they are almost impervious to damage from water, fire and frost.

There are today in Kansas nearly as many brick plants as there were men employed in the brick-making industry in the State twenty years ago, and almost any one of the plants down in the gas belt will turn out as many brick in a day as the combined daily output of all the plants in the State at that time.

Labor Commissioner Johnson in his annual report for last year states that there were about 2,500 men employed in the brick and tile industry and that their total wages for the year were very nearly a million dollars. And the demand for brick is so great that four or five times as many plants and men would not have overstocked the market. In fact, all over the west buildings were built of cement blocks, stone, etc., which would have been built of brick could they have been obtained.

In the new State of Oklahoma there exists today a demand for brick that was never before equaled in any State in the Union, it being estimated that four hundred million brick would be used there during the next year if they could be secured. This extraordinarily great demand is due to the very large number of school buildings, court houses and other public buildings made necessary by the wonderful growth of that State, and made possible by the vast sums secured in taxes from its oil producing sections.

Hundreds of business buildings in that State are being built from native stone, concrete blocks and lumber because the builders cannot find brick manufacturers who will contract to furnish the brick within a specified time. The same conditions obtain, although in not so great an extent in Texas, Arkansas and Louisiana, and no immediate relief is in sight.

A few years ago, when cement block and concrete construction first came into prominence many people, both brick manufacturers and others, became very much afraid that the advent of cement meant the destruction of the brick industry, but that fear, like the fear that the bicycle would do away with the demand for horses, had no foundation in fact. Each fills a demand that cannot be adequately met by the other, and the demands for both are far beyond the visible supply, while the constant decrease in the supply and increase in the price of lumber and the tendency toward fireproof construction seems to indicate that the increase in the building demand will keep pace with the increase in the number and capacity of plants; while the growing popularity of the vitrified brick blocks with asphalt filler for paving purposes promises a market for all that can be made for many years to come.

It is a remarkable fact that during the panic of 1907 vitrified brick and paving blocks did not fall a cent in price, while building brick, lumber, cement and structural steel all showed marked decreases, and it is a further fact that no other commodity, unless it is pig iron, is more readily accepted as security for industrial loans, and a manufacturer who needs money temporarily can get it upon paving brick almost as readily as a pawnbroker loans money on a diamond.

Vitrified brick, such as were used for paving purposes a few years ago, are coming to be used a great deal in the last few years in building residences, flats and apartment houses as well as for business and public buildings, and, while the first cost is slightly greater than frame construction, the lower cost of maintenance, painting, etc., make them a much cheaper building material, while the difference in fire insurance rates and the greater appearance of stability renders buildings made of them much more desirable from both economic and aesthetic points of view.

In spite of the fact that a good many of the smaller brick plants of Kansas have been established and are managed by men that are not practical brick men, it is stated that no other manufacturing industry in the State has paid a bigger return on the money invested than have the brick plants established since the discovery and development of the shale processes and the use of natural gas for fuel. One plant in a town not a hundred miles from Topeka has paid average dividends of 60 per cent a year for the last ten years and another not much further away paid 70 per cent last year, and neither of the two plants were of modern construction, hence could not carry on their processes by the most economical methods.

Under the heading, "Brick Production in Oklahoma," the Daily Oklahoman, of Oklahoma City, of July 4, said editorially:

"Oklahoma is destined to become one of the greatest brick producing states in the union, as she has the clay and the fuel with which to burn it.

"The greater part of the rocks in eastern and northeastern Oklahoma consist of alternating layers of clay and shale, with intervening strata of limestone and sandstone. This clay and shale is usually gray, yellow or drab in color. The greater part of the clay in this region is suitable for the manufacture of pressed brick, stiff mud brick, tile, hollowware, and certain grades of pottery. Pressed brick plants have been established at Bartlesville, Ramona, Ochelata, Tulsa, Redfork, Sapulpa, Cleveland, Okmulgee, Vinita, Claremore, Muskogee and McAlester. Few of these plants do more than supply local demand and so great has been the demand for brick the past few years that many towns have had to import brick from Kansas.

"This is the fuel region of Oklahoma. Coal is found in every county in this part of the State and near practically every town. Oil and gas are present in the greatest abun-

dance in many localities. Gas wells which furnish all the way up to 50 million cubic feet per day occur in many communities. Nothing is needed in this region but the establishment of tile and pottery works.

"All the essentials for a number of profitable plants are found in eastern Oklahoma. Raw material is here in abundance; cheap fuel, of three kinds; coal, oil and gas, is in quantities, for all practical purposes, inexhaustible. Competing lines of railroads spider-web the region. A market is assured; for Oklahoma now has a million and a half of people with comparatively few substantial buildings. Almost no drainage has been built and a few roads constructed. Drain tile will be used in constantly increasing amounts, for drainage and culverts. The first plants on the ground will reap a harvest. A number of growing cities stand ready to give substantial encouragement to bona fide enterprises.

"Professor Gould, State geologist, has made arrangements through co-operation with the United States Geological Survey to have the clays of the various parts of the State tested at the government laboratories in Pittsburg this summer at government and State expense. The State chemist will spend the summer in Pittsburg assisting with the tests.

"Dr. Gould wishes to find out just what products the various clays and shales of the State are suited for and make the information public through reports of the survey."

Commenting upon the statements of the Oklahoman, a prominent Kansas manufacturer stated to the writer the other day that they were very conservative. He said: "Certain sections of Oklahoma, such as those around Tulsa, Henryetta, etc., offer the greatest advantages for clay and shale manufacturers that are offered anywhere in the country today. Beside unlimited deposits of shale they have the three kinds of fuel mentioned in quantities not found elsewhere in the country. There are in the gas field of Oklahoma wells having a combined capacity of over a billion cubic feet per day capped in and not drawn upon because there is no demand for the gas, and ten times as much more could be drilled in without going outside the proven fields, while wild-cat drilling would doubtless develop the same condition in fields where no drilling has been done. Most of the Oklahoma gas is deep well gas—wells from 1,200 to 2,000 feet deep with rock pressure of from 500 to 900 pounds per square inch, and they will range in capacity from five to fifty million cubic feet per day.

"There is no question but that investments in Oklahoma brick and tile plants will pay big dividends in the next ten years, and I will not attempt to forecast what they will be after that time. I know that the inland tariff which Oklahoma holds against brick from other states by means of its intra-state freight rates on brick being lower than those on interstate shipments is sufficient to pay anywhere from 8 to 30 per cent on the money invested. Why, on a haul of 75 miles the difference is enough to amount to $1.27 on each thousand, while on shipments of 250 miles and upward it amounts to $1.90 a thousand.

"The fuel cost is the biggest item in brick manufacturing where coal is used, and the saving in cost of manufacturing by using gas will amount to from $1.25 to $2.50 a thousand, while the demand is great enough to make it possible to sell at just as high prices as the coal burned brick must bring. And I know of places in Oklahoma where I can get contracts for gas at 3 cents a thousand feet as long as the field lasts, while at the same time it will be possible to fall back on oil and coal when the gas field is exhausted.

"Another thing that is going to be in favor of the plants that will be built in that country, as compared with our Kansas plants, is the fact that manufacturers are waking up to the fact that it pays to put in the most up-to-date machinery, no matter how much more it costs, because it makes possible a bigger output every working day, and that means a lot of gain in each year. You know it is necessary to shut down almost all plants on rainy or snowy days, because it is hard to get men to work in the shale pits and because the shale will not grind as well as when it is dry, so the up-to-date plants will be provided with storage bins to hold enough shale for several days' run and when wet weather comes they need not stop an hour. By this means a gain of fifty days in each year can be made. If a plant makes a hundred thousand brick a day the profit on the output for those fifty days' product will amount to a pretty good figure.

"The modern plant will be built practically fireproof and a big expense in the way of fire insurance premiums will thus be avoided, and the use of the internal combustion engines for power will produce a considerable saving.

"The brick plants of the future will be big ones and the companies owning a number of plants will be the ones to make money, because they can undertake contracts that the smaller plants won't dare to touch and they can cut down the overhead cost enough to pay dividends where the smaller companies would not more than break even.

"Then think of the demand for other shale and clay products. Take sewer pipe and drain tile and roofing tile; they are made by only one of two plants in this section of the country and the demand for them is hardly started. What will it be in a few years? Roofing tile is going to be the roofing material of the future, and there is only one plant west of the Mississippi river that I know of, and that is at Coffeyville, and it employs only about 35 men.

"I look upon the brick and tile industry of this mid-continent field as the biggest money-making opportunity in the United States today."

GALESBURG MAN GETS $20,000 FOR PATENT.

E. S. Lafferty of Galesburg, Ill., has just concluded negotiations for the sale of his patent rights in the manufacture of hollow building brick and as the result it is said that the local man will get in the neighborhood of $20,000 in royalties and other perquisites which accrue to him as the holder of the patent right. Mr. Frank Dutcher of Versailes, Pennsylvania, who has been stopping for several days past at the Illinois hotel and engaged in negotiations with Mr. Lafferty for the sale of his patent, left for Pittsburg after the deal had been consummated. It is estimated that the royalties which will accrue to Mr. Lafferty will aggregate $20,000.

Mr. Lafferty resides east of the city on Michigan avenue. The patented article for whose manufacture he gets the big sum is a hollow building brick. The brick is just like the ordinary building brick except that instead of being solid it is hollow. By this hollow construction the manufacturer is able to make brick much cheaper than by the old method as the hollow brick require much less fuel in the kilns and can be burned in much less time. A saving is also effected in the material used in the brick and it is represented that the hollow brick are capable of withstanding all the pressure necessary in ordinary construction work. Another advantage is that the brick are much lighter and much easier to handle a fact which cuts down freight rates and facilitates the work of building construction. Still another advantage found in the hollow brick is their sanitary excellence, the air-chambers in the brick making the buildings of which they are constructed of much more even temperature all the year round.

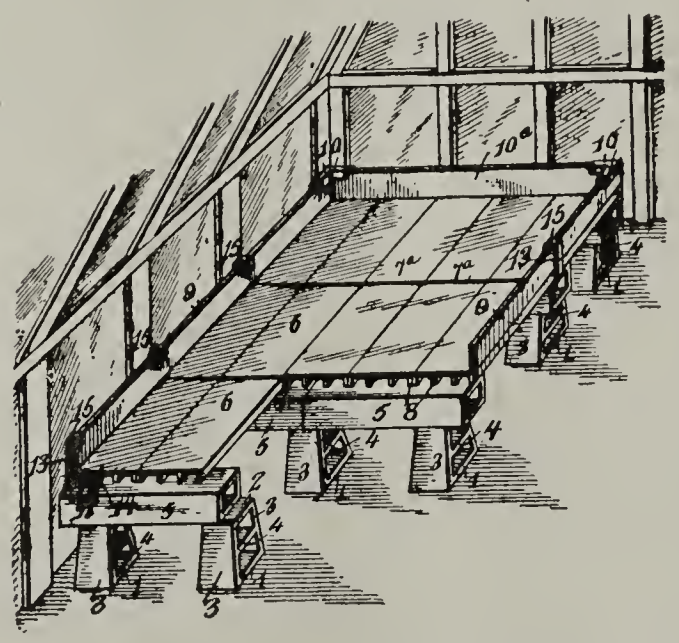
It is said that Mr. Dutcher, who conducted the negotiations for the sale of the patent intends to head a syndicate which will manufacture the brick. The plant is to be located near Pittsburg and will represent an investment of $300,000. For each brick manufactured Mr. Lafferty will receive a royalty and the aggregate is expected to net him a handsome sum.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

923,921. Tile Greenhouse-Bench. Byron P. Wise, Cleveland, Ohio. Filed July 11, 1908. Serial No. 443,084.

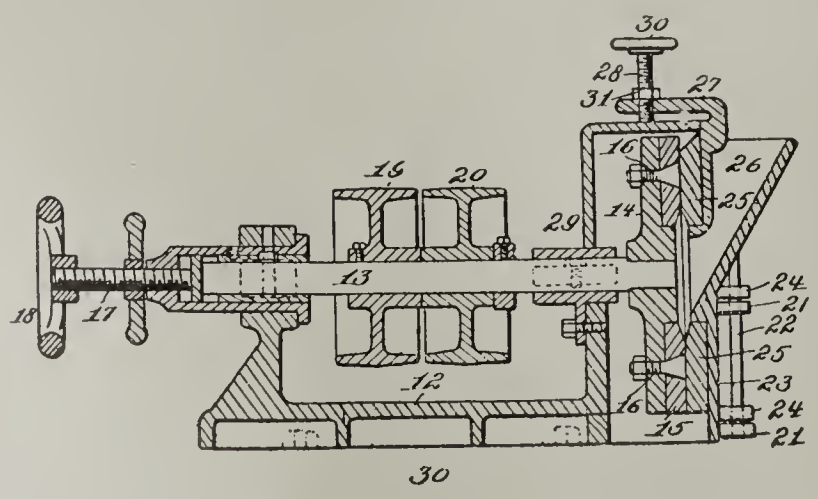
A tile greenhouse bench, comprising rows of hollow posts, a plurality of hollow cross-beam tiles arranged in alinement and carried by the posts in each row, and floor-tiles resting upon the hollow cross-beam tiles, each floor-tile provided with webs or flanges extending, transversely of the cross-beam tiles.



In a tile greenhouse bench, the combination with a support, of a floor-tile carried by said support, said floor-tile comprising a body provided with longitudinally-extending vertical flanges or webs upon its under face, and said webs serving as a support for the body and spacing the same from the support.

924,014. Grinding-Mill. Thomas L. Sturtevant, Quincy, and Thomas J. Sturtevant, Wellesley, Mass., assignors to Sturtevant Mill Company, Portland, Me., a Corporation of Maine. Filed October 5, 1905. Serial No. 281,404.

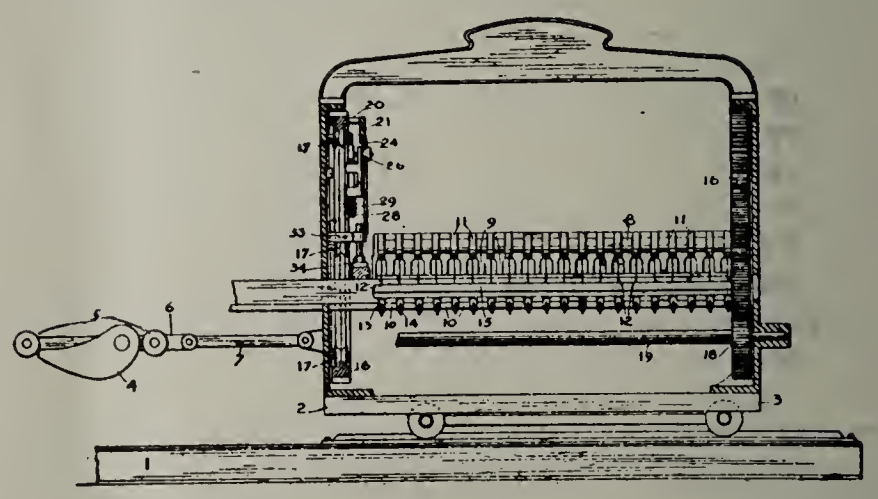
In a grinding machine, the combination with a rotating disk or plate, of a casing having a section adjustable transversely to the axis of rotation of said rotating disk or plate, a stationary disk carried by said adjustable section, and an adjusting screw for moving said adjustable section transversely to the said axis of rotation of said rotating disk or plate.



In a grinding mill, the combination with a rotating grinding disk or plate and a casing within which the same is mounted, of a door-like part closing the end of the chamber formed by the said casing and mounted on a vertical hinge or part so as to swing horizontally, said door-like part having a horizontally extending arm overlapping said casing, a stationary grinding disk or plate mounted on said door-like part, and a screw tapped in said arm and abutting against said casing for adjusting the said door-like part vertically on its hinge or pivot for the purpose of varying the eccentricity of the said stationary disk or plate relative to the said rotating disk or plate.

924,113. Cutting-Table for Bricks and Tiles. John S. Smith, Niles, Cal. Filed December 29, 1908. Serial No. 469,868.

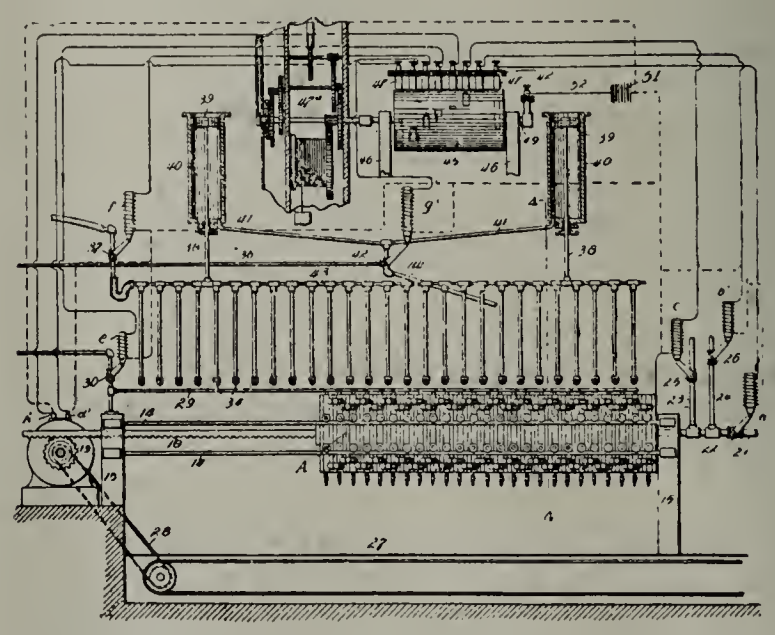
In combination with a support for a bar of clay, a cutting reel comprising cutting wires, means for rotating said reel, a presser foot for holding a bar of clay immovably on said support, means for so actuating said presser foot, and means arranged to be rotated with the reel for operating said actuating means, substantially as described.



In combination with a support for a bar of clay, a cutting reel comprising cutting wires, means for rotating said reel, a presser foot for holding a bar of clay immovably on said support, means for so actuating said presser foot, a cam secured to said reel and arranged to move said presser foot into its operative position immediately before the cutting wires enter the bar of clay, and to hold the same in operative position while said cutting wires pass through said bar, and means for adjusting said cam as to its angular position, substantially as described.

924,131. Filter-Press. Samuel K. Behrend, Denver, Colo. Filed July 21, 1905. Serial No. 270,663.

In a filter press, the combination with a suitable support and tracks, of a plurality of frames mounted to travel on said tracks, and automatic means for forcing them together and separating them.



In a filter press, the combination with a suitable support and tracks, of frames mounted to travel on said tracks, said frames loosely connected to one another, whereby after a limited separation of two frames, the third and fourth will be separated and so on until all are pulled apart, and automatic means for applying power at one end of the series of frames for separating them and for forcing them together.

PACIFIC COAST NEWS ITEMS.

During the past two weeks there has been a decided increase in the price of lumber locally and the announcement is made by several builders that they have changed their plans and will use brick instead of wood now that the actual cost of construction is so nearly the same, or so close, anyway that the increased cost of the brick work does not make a great deal of difference. One of the most encouraging features of the situation locally is the fact that work has been started on a large number of flats and apartment houses in the burnt district within the fire limits. These are all brick structures and the commencement of active work in this district will mean an increased market for brick, or one which will make up for the decreases that are to be noted in the erection of large office and store buildings in the downtown district due to the fact that the chief retail and wholesale districts are well built up again. Property owners in the district lying between the present retail district and Van Ness Avenue have been petitioning the Board of Supervisors to take away a large area from the district covered by the present fire limits and allow cheaper buildings to be erected, but such action has not been looked upon in a favorable light and brick and concrete are the materials that must be used.

The ruins of the old City Hall have been practically all cleared away and most of the brick have been cleaned and are now being marketed. Immediately after the fire large quantities of brick were hauled away and dumped into sloughs and low places but now everything is saved and used. The whole brick are cleaned and used again and the broken bits are crushed to the right size and used for making concrete where great strength is not required.

The efforts to secure a uniform sized brick does not seem to have met with much success from the local manufacturers for while the standard size adopted was made for a time by most of the concerns in the business many of them have gone back to the old sizes again and there are now about as many sizes in use as there plants in operation. Several manufacturers have taken up the manufacture of a brick double the size of the ordinary brick and this is meeting with considerable favor from contractors who use them for foundation work. They are rapidly laid and a wall in which they are used is just as strong as though the old style ones were used. In a few cases they have been used for face work in walls, the odd size being considered quite distinctive.

W. E. Dennison, who is one of the members of the State Board of Harbor Commissioners, and also president of the Steiger Terra Cotta and Pottery Works, in speaking of his opinion of the new tariff, as applying to the brick making industry says: "I believe that California has fared as well in the new tariff as any other State in the union. The reduction on firebrick will have practically no effect on the business done in that line on the Coast. The importations of firebrick have lessened and lessened each year until they amount to but little and we make right here in the State better brick than the imported article. The fact that California plants have been shipping firebrick to the Orient is sufficient proof that protection is not needed here."

A Bartolomeo, an employee of the Great Western Brick Company of Richmond, Cal., was killed at the plant recently by having his leg caught and crushed in a grinding machine. The grinder was in full operation and the top of it being on a level with the ground Bartolomeo accidentally stepped into it. Before the machinery could be stopped or the man could tear his limb away he fell backward, dead.

A. Abrahamson of Oakland, Cal., has purchased the old brick works on the water front at Vallejo and has organized the Hyfire Brick Company to take over and develop the property. New machinery will be purchased immediately and some brick will be made before the winter rains set in, if possible. The enterprise is backed by Oakland men among whom are Albert and G. Abrahamson, E. E. Kemble, F. E. Alexander and A. Mayer. It is the intention to manufacture both common and fire brick.

The Pyrmont Brick Company of Lincoln, Cal., engineered by Sacramento capitalists, is making great preparations to commence operations at that place. A spur track is being laid from the main line of the Southern Pacific railroad and as soon as this track is completed to the clay beds the work of erecting an immense brick plant will be commenced. The clay secured from the beds around Lincoln are of the highest quality and it is from this section that the high art tiling to be used on the Columbia theater building in San Fancisco is to be secured.

A new brick yard is being planned for Benecia, Cal., but definite plans have not been announced by the interested parties. A portion of the Dillan ranch owned by the Dominican Fathers, near Glen Cove has been leased to San Francisco parties and within a short time a brick and tile works will be erected there. There was formerly a similar plant on the ground but this has not been operated for a long time.

The Simons Brick Company which has been negotiating for a site for a tile works at El Centro, Cal., has selected a site of twenty acres on the outskirts of the city. The brick company is a Los Angeles concern and a large part of the product will be shipped there.

Plans have been made by the Vallejo Brick & Tile Co. for some extensive additions to the plant at Vallejo but the installation of new kilns will not commence until next spring. Nine kilns are now in operation and these are being worked to their full capacity in order to keep up with the demand.

The big plant of N. Clark & Son in East Oakland is very busy at the present time working on sewer pipe. All of the small incorporated towns east of that city are installing sewer systems and a large amount of sewer pipe is being used.

What is planned to be the largest sewer pipe and clay products plant in the Northwest, and one of the largest in the United States, is being built at the present time near the city of Spokane, Wash., at an estimated cost of $300,000. William M. Colby of Mason City, Iowa, is president of the concern and S. J. Beal of Minneapolis, secretary. Surveys for the big plant have been made and work has been commenced on some of the buildings. Machinery is to be purchased at once and it is expected that a portion of the plant will be in operation by the first of the new year.

The Washington Brick, Lime and Sewer Pipe Co. has been incorporated at Spokane, Wash.

CLAY RECORD.

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Vol. XXXV. AUGUST 30, 1909. No. 4

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

Every man has a klondike in his own brain, "Keep digging."

Some men who pat you on the back would rather punch your head.

Don't wait for your ship to come in. Charter a tug and go out to meet it.

It's all right for selfish people to indulge in self-admiration; otherwise they would not get any kind.

We have not asked you about that subscription lately. Have you sent it in? One dollar for twenty-four numbers is all that is asked for papers to be sent in this country.

Advertising of the right-kind in the right-place at the right time cuts the salesman's work in two. Don't expect your salesman to do their best unless you do the best for them.

"No person should be refused employment, or in any way discriminated against, on account of membership in any labor organization, and there should be no discriminating against any employe who's not a member of a labor organization by members of such organizations."

Your advertising is saying something or other about your goods or factory to the public every day in the year. It is forming impressions and shaping opinions in thousands of minds all the year. Do not neglect it, or think you can get along without it because business may be good or poor.

BALTIMORE MERCHANTS SATISFIED WITH THE TRADE SITUATION.

The settlement of the tariff question is reflected in decided improvement in all branches of trade, especially in iron and steel lines. For the first time in two years all departments of the Maryland Steel Co. are running full time six days a week, giving employment to 4,000 men and boys. Wholesalers and jobbers report shipments of goods, especially to the South, larger than at any time for two years. Southern merchants continue to come to Baltimore in large numbers, and without exception bring the most encouraging advices relative to conditions in Dixie. They say that the monetary returns from cotton will be the largest on record, despite the decrease in the yield of the staple.

Local railroad officials are well satisfied with the traffic situation and predict a return to the volume of 1906 and the first half of 1907 by the end of the year. Many shippers are apprehensive of a shortage of cars, but traffic men say there is no danger of a blockade. It is a fact, however, that railroads are looking ahead and are buying equipment to be in position to handle the expected rush of freight. The order for cars, rails and bridge material, aggregating approximately $7,000,000, just placed by the Baltimore & Ohio Railroad, is to be followed by further purchases before the close of the year, which will call for an additional expenditure of more than $3,000,000. The repair shops of this company in and around Baltimore, also those of the Northern Central Railway, are busier than they have been at any time since the panic.

The Baltimore Brick Co., the largest manufacturer of brick in this territory, is operating its plant to full capacity and reports a steadily increasing demand for its product. The coal industry in Maryland and West Virginia is sharing to the full in the better times. Production of fuel is larger than for two years, and prices are more stable. Coastwise shipments have reached large proportions, and the coal piers along the wharves are taking on something like the old-time activity. Foreign demand for coal is improving, and some good-sized contracts are pending.

FASHIONS IN BRICK.

According to an interesting article in *Surburban Life* for September, there are fashions in brick as well as in woman's dress. The writer, C. Wendell Lansing, of the article says: "No longer are buildings built of red brick of uniform color and shape, laid in running bond, with narrow mortar joint, the whole giving the appearance of a painted surface ruled off with geometrical precision. This conventional style has been abandoned, and has given place to walls built of brick of varying colors, shapes and finish. The style of the mortar joint has also changed, with the result that today a brick facade is a work of artistic character, and the various styles of brick and of brick-laying offer themselves to an unending variety of architectural treatment."

FIRE! FIRE!! FIRE!!!

Fire destroyed one of the large kilns at the Tobias & Sheridan's Brick Works at Hamburg, Pa., the large shed being entirely destroyed. The plant is running at its fullest capacity and the kiln will be rebuilt as soon as possible.

Oil exploded in the oil room and completely destroyed the sand-lime brick plant of the Owensboro (Ky.) Sand Lime Brick Co., causing a loss of $35,000. Insurance, $20,000. Same is now being adjusted and it is expected the plant will be rebuilt at once. To save expenses the company had taken off the night watchman.

The John Kulp & Son Brick Works on Marion Avenue, Columbus, Ohio, was visited by a fire which caused damage to the plant to the extent of $7,500.

MANUFACTURERS OF HOLLOW TILE AWAIT TEST WITH INTEREST.

Columbus manufacturers of hollow tile, and in fact, all men interested in this industry, which has grown to great proportions in the Hocking valley and the eastern district of Ohio, will follow with interest the tests to be made in New York City in the next few weeks of the use of hollow tile in fire-proof buildings.

W. D. Henry of Pittsburg, president of the National Fire Proofing company, has been in New York arranging for the test and in letters to local men regarding these, he says that Mayor McClellan gave hollow tile a clean bill and in order that there may be no misunderstanding has suggested and Mr. Henry, with other manufacturers, have agreed to have a test in order to settle the points in dispute. Representatives of hollow tile and cinder concrete construction will be present and both will give tests. Mr. Henry says that the result of these tests will settle the whole controversy and prove of benefit to the fire proofing company. It is contended that the entire matter has been wonderfully misrepresented in New York because the concrete interests have had a monopoly on the small building business, and the hollow tile concerns seek to secure their share. The National Fire Proofing Co. announces that it will furnish hollow tile for the new Morris building, Philadelphia. It will require 10,000 tons. The material will be shipped from one of the Ohio plants.

CHAMBERS BROS. CO. NEW CHICAGO ADDRESS.

On September 1st, the renumbering of streets in the City of Chicago will take effect and it is important that subscribers in writing to firms use the new address if they wish their mail to be delivered as early as possible.

The only advertiser in the Clay Record that is affected by this new ordinance is the Chambers Bros. Company, of Philadelphia, who have maintained a Chicago office and supply department at 59 West Jackson Boulevard. This office after the above date will be known as 524 West Jackson Boulevard.

Mr. E. R. Frazier would be glad to meet all his friends at the new number but at the old stand and will tell them of some of the recent accomplishments of the Chambers Machinery.

FIRE CLAY DISCOVERED, TWO PLANTS STARTED.

The first brick company is now awaiting a big lot of machinery, while a second is making preparations to do business at Ranier, Oregon. It has been found during the excavations for sewers that the whole city is underlaid with the finest kind of brick clay, and vast quantities of fine clay are found just on the outskirts of the city.

ACCIDENTS, DAMAGES, AND LOSSES

An employee of the Cary Brick Co., living at Stuyvesant, N. Y., had his back broken by falling from a load of wood.

Joe Gondol, a laborer, lost his hand by being caught in the mold of the brick machine at the plant of the Flint (Mich.) Sandstone Brick Co.

Louis Horn, manager of the Cement Block & Concrete Co., Bellefontaine, O., was killed by falling from the top of a 30-ft. derrick which fell with him and crushed his skull.

Joe Quezada is suing the Texas Brick Co. for the loss of an arm in their Carrollton plant. He wants $18,000 for lost earning capacity and $10,000 for physical pain he suffered.

The Empire Brick & Oil Co.'s plant at New Albany, Kansas, has been sold by sheriff's sale to trustees who will reincorporate and reorganize the company and work the plant.

The plant of the Florida White Pressed Brick Co., near Jacksonville, Fla., has been ordered sold by the court on complaint of the Barnett National Bank, which it owes $11,000.

Michael Reilly an employee of the Archer Bros. Brick Works at Haverstraw, N. Y., was killed by highwaymen. He was found by the roadside with his skull crushed and his pockets empty.

The State Labor Agent caused the arrest of E. W. Wolters of the Wolters Bros. Brick Works at Atchison, Kansas, for employing a fourteen-year-old boy, which is a violation of the child labor law.

The heavy rains did damage to the St. Anne (Ill.) Brick & Tile Co.'s plant by being flooded causing a loss of $500. A rotary pump capable of throwing 10,000 gallons of water per hour will be permanently installed.

The Yoke Vitrified Brick Co., Coffeyville, Kansas, has been made an involuntary bankrupt by proceedings filed by creditors. The liabilities are $150,000. A. J. Yoke founded the business but sold out some time ago.

Two men were injured, one killed, two houses demolished and much other damage was done as a result of blasting at the plant of the Kansas Buff Brick Mfg. Co., at Altoona. 4,000 pounds of powder and 100 pounds of dynamite let go.

NEW YORK BRICK MARKET STILL SLUGGISH.

The brick situation remains in the same condition reported last issue. Market quotations range from $4.50 to $5 for common hards. Several instances were reported where $5.25 was obtained, but these are exceptional, and do not represent prevailing prices. The feeling is general that prices will not drop any further, but on the other hand no prophesies are being made as to when conditions will improve.

Transactions last week were: holdovers, 16; arrivals, 69; sales, 74. Eleven cargoes held over for this week. These are normal figures, and show that the shipments met a slightly improving market.

From one source it was learned that if the present condition continues manufacturers will stock up their sheds and stop making, or at least ease off for a while. An unprecedented run of good brick making weather is responsible, in a large measure, for the present over-supply. Some dealers are taking advantage of present prices and are stacking, but this would be more general if better grades were coming in. As it is few are loading heavily.

PRODUCT OF LABOR OF CITY PRISONERS HAS FAILED OF A MARKET.

The board of charities and corrections in a report submitted to the Minneapolis city council summed up the conditions at the workhouse which call for the use by the city departments of the brick manufactured by city prisoners.

Some time ago the local teamsters' union raised objections because the city contemplated using prison-made brick in school buildings, and declared that it would refuse to haul the material. This led to an investigation by the board and the following report resulted:

"In August, 1904, your honorable body passed an ordinance the effect of which was to compel the employment of city workhouse labor in the workhouse grounds only.

"From June 1, 1905, when the ordinance went into effect, until December, 1907, the only available outlet for the workhouse labor was the routine work in the workhouse grounds and farm. The result was the enforced idleness of prisoners, for it was found impossible to find steady work for more than one-third of the population.

"The others had to be kept in their cells. In December, 1907, the population increased to such an extent that the forced idleness had an extremely bad effect. The board found it expedient to establish some industry in the workhouse grounds so as to not infringe on the ordinance. The result was that seven acres of adjoining ground was purchased which contained a large deposit of brick clay. A brick plant was also required.

"The work has proceeded down to the present time, giving ample employment to the prisoners. During the season of 1908 there was manufactured 1,900,000 brick of which 1,100,000 is still on hand. So far this season, 1,400,000 brick were manufactured, making a total of 2,500,000 brick on hand. No effort has been made by the board to dispose of this product to outside purchasers in competition with outside companies. Every effort has been made to cooperate with the other city departments, but without success.

"At the present time the storage capacity is exhausted and unless immediate steps are taken it will be necessary to shut down the plant altogether."

The board asked that the council take steps providing for the disposition of the brick.

On motion of Alderman Williams the question was referred to a special committee made up of one alderman from each ward. He intimated that one city department had asked for prices on the product but that it had not been given any figures.

AMERICANS ORDER FIRE BRICK OF SCOTTISH FIRM.

New York, Aug. 21.—English cablegrams say that American iron and steel manufacturers have placed large orders for the immediate shipment of fire clay bricks for the erection of many additional blast furnaces. Most of these orders have been placed with Scottish makers, so the advices state, with instructions that the material is to be delivered in the United States as quickly as possible. In England these orders are accepted as an additional indication that the iron and steel trades are booming.

BRICKYARD EMPLOYES GIVE LIBERALLY TO HOSPITAL.

Cash donations to St. Luke's Hospital at Newburgh, N. Y., in July were as follows: David L. Ward, $4.50; children of Berath Heyman, $2.61; Misses Della Gardner and Helen Rouss, $5; Miss Mary B. Wright, $2; Mrs. George H. Ross, $5; Hon. Cornelius L. Waring, $5; Lawson Hose Co., No. 5, $50; Arrow Brick Co., $55; the Jova brick works and employes, $170; Bartlett brick works and employes, $65.

CLAIMS HE WILL KEVOLUTIONIZE BUILDING.

The following from the Indianapolis Star tells of Lieut. Parkhurst's inventions that will revolutionize building.

"The invention of a process which makes stone from earth—stone that is harder than granite, impervious to water and which can be moulded into any shape and produced in any color—was announced yesterday by L. M. Parkhurst, an Indianapolis man.

"Patents are pending on the process, and until granted the secret will not be made public. The invention is of a chemical operation, used in connection with an electrical apparatus of special design. The feasibility of the invention has been indorsed by State Geologist W. S. Blatchley, Prof. Michael Golden of Purdue University and the Smithsonian Institute at Washington.

"By the process building brick can be made for $1 a thousand, and from the very earth that is dug out from the foundations. The material can be manufactured and is better than concrete because impervious to water. A solid rock roadbed can be made for railroads, which will stand as long as solid granite would stand, and would obviate washouts and a tremendous expense which is yearly required to keep roadbeds in good condition.

"In fact, any construction that requires stone, brick, tile or concrete is open to the competition of this new material, which, it is promised, will make better stone and cheaper stone.

"By the process any of the ingredients of the earth within twenty feet of the surface are eaten up by Parkhurst's machinery and turned out into his rock. It can be molded into any shape, in bricks, slabs or blocks. Street pavements can be constructed from it and the foundations for pavements, with the very dirt that is excavated for the foundation, with the machine right on the ground to make the transformation.

"'The very proposition itself' said Parkhurst, 'means either nothing or a fabulous sum. I have been very careful not to take one step without scientific verification of my theory.'"

MILWAUKEE BRICK PRICES TAKE A FALL.

Milwaukee brick took a great tumble the middle of the month. A cut of 50 cents a thousand was made.

It is expected that the slump will have a stimulating effect on building. Building work of all kinds will be effected.

A year ago at the corresponding period of the season, Milwaukee brick was $6.50 a thousand. It is now $6.

The cut in Milwaukee is said to be due to the warfare of Chicago brick-makers, who only recently stopped the slashing of prices that had prevailed in that city, but who are still fighting on outside business. In Chicago the manufacturers are charging $6 for brick in Milwaukee, after paying the freight, they make a price of only $4.50.

OAKLANDERS TO TAKE OVER BIG BRICK WORKS.

The Hyfire Brick Co. has been incorporated by San Francisco and Oakland capitalists to take over and operate the brick and tile works on the north beach shore at Vallejo, Cal. The local plant, which is one of the finest in the West, has lain idle for many years. The capital stock of the company is $100,000, divided into shares of the par value of $1 each. The incorporators of the company are Albert Abrahamson, A. Mayer, G. Abrahamson, F. A. Alexander and F. A. Kemble.

Don't let your profits run away when you can use a clay feeder and mixer on your machines and save from $500 to $1,000 a year. Write to the Marion Machine, Foundry & Supply Co., at Marion, Ind., for particulars.

BRICKLAYERS SHOUTING FOR MORE BRICKYARDS.

To the Editor. Some time ago I was instructed by the Bricklayers' union to go before the city council with a statement of facts regarding the shortage of brick in Omaha.

I asked them to repeal the ordinance forbidding the erection of brick plants passed by the old council. We thought at that time that with such an array of facts and arguments as we were able to present the council would certainly have their eyes opened and see the injury that had resulted from the passage of such a hasty ordinance. But it seems that a few of the "high brows" in the west end of town immediately began to sneeze and were almost suffocated at the mere mention of more manufacturing industries in Omaha. After the council adjourned I heard some of the gentlemen who were protesting against this repealing of the ordinance say: "Let Sioux City or any other place make the brick, we will buy them and we don't want them made here."

Now the facts are that for the last two years the bricklayers of Omaha have been losing thousands of dollars through lost time caused by a shortage of brick. And when bricklayers cannot get material it naturally follows that all other building trades must also lose time and buildings which are badly needed are tied up.

The government geological report specially mentions the clay along the river near Omaha as being the cheapest clay to work and the most accessible of any in the west.

Modern brick plants such as we have now of the gas producer style will not make as much smoke or fumes as one of our ordinary schoolhouses. It would certainly be a good idea for the different clubs formed for the purpose of boosting Omaha to cease paying attention to a few "finicky" ones and boost for more brick plants, more improvements, annexation, better streets and a great, big Omaha.

GEORGE ROUTT,
Secretary Bricklayers' Union.

A NEW BRANCH OF MOSAIC INDUSTRY.

That Trenton, N. J., is forging its way to the front in the manufacture of tiling for the exterior of buildings is evidenced in the recent receipt of an order from Louisville, Ky., by the Mueller Mosaic Co., of Chambers and Cedar Streets.

This company is making a specialty of an entirely new application of faience enamels, and the interior of the same office building in Louisville is to be partially walled with some exceptionally artistic designs of this character.

These enamels are of Roman mosaic of small tesserae, principally representing mediaeval coats of arms. They are also produced in similar panel work of Florentine mosaic, representing classical subjects of numerous types and periods. One of each of these panels is now on exhibition in the windows of Thomas Trapp, jeweler, in the Commonwealth Building, on East State Street.

In addition to the above, the Mueller Company is preparing a new style of tiling of Arabic ornamentation, said to be one of the finest grades of higher class of mosaics. It, too, is largely for hallways, lobbies, bath rooms and other places where better materials are employed.

The Mueller Co.'s Louisville order will require many thousand feet of tiling, inasmuch as the building to be decorated is an office building of several stories and the interior is spacious. Shipments are to commence within the next two weeks and the entire delivery to be completed before the middle of October.

Herman Mueller, president of the Mueller Co., is one of the pioneer tile men in the United States. He founded the Mosaic Tile Co. in Zanesville, O., now one of the largest factories in the country, and for several years he was with the Robertson Art Tile Co. in Morrisville.

MACON NOW THE LARGEST BRICK PRODUCER IN THE SOUTHERN STATES.

There are few people in that section who realize the magnitude of Macon, Georgia's, brick industry. The brick manufacturers of Macon supply practically all of southwest Georgia, and even shipping their product into Atlanta by the millions. Macon people as a rule are not aware of the fact that there are over one hundred million of brick manufactured in Macon every year.

Out of this hundred million, the Standard Brick Co., which has come to be recognized as the largest brick manufactory in the south, makes and ships approximately seventy-five million brick per annum.

A new feature that they have just added to their plant is the building of six large down draft kilns, especially constructed to burn paving brick. This industry was prompted by the experiment that the city of Macon made the first of the year in placing its orders for about a half million vitrified brick with the brick makers of Macon. It proved very difficult for the makers to supply a satisfactory article out of the old style up draft kilns, and the Standard Brick Co., with its enterprising management, readily arose to the necessities of the occasion, and at an expense of between $15,000 and $20,000, installed the large number of down draft kilns. These kilns will produce solid blocks of vitrified brick. They come out as blue as steel, of a uniform color, and vitrified throughout.

In talking with Mr. Dunwody, president of the Standard Brick Co., a representative learned that they were making extensive contracts for paving many streets for south Georgia cities, and their products going well into Florida.

The clay of the Ocmulgee river swamp has been analyzed, and it is learned that the treatment to which it is now subjected by the Standard Brick Co.'s plant and the down draft kilns that have just been installed, that this brick is as durable as any paving material to be obtained anywhere.

The Standard Brick Co. is also making a specialty of face brick, having immense sheds under which they are stored and sorted after having been made by machinery especially adapted to the purpose, and burned in kilns especially erected for burning them a beautiful uniform color.

The Standard's plants are running on full time, and they are turning out from ten to twenty to thirty cars of brick per day, covering the whole of south Georgia, a large part of Alabama, and going far into Florida with their product.

FIRE DEPARTMENT CHARGED WITH RESPONSIBILITY OF THE FIRE.

W. H. Kulp, proprietor of Kulp's brick yard in Marion avenue, east of the City of Columbus, Ohio, declared that the fire department made no effort to extinguish a blaze which destroyed the engine and machine rooms in his brick yard, and says the damage to the plant was $7500 to building and machinery. The fire department estimated the loss at $100.

Mr. Kulp further declared that there is a fire hydrant but two squares from the building which burned, but no water was thrown.

Chief Daniels of the fire department said Mr. Kulp's criticism is unjust and that he probably does not know the conditions which existed at the fire.

"In the first place," declared the chief, "the presence of hydrants would have made little difference at the Kulp fire. When the department arrived the building was a total loss and nothing could have been done to save it whether there was water there or not. The building had a good start and burned fast.

"The closest hydrant to the brick yard is considerable distance away and it would require 2000 feet of hose to have reached the fire."

SINGLE COURSE BRICK STREETS DOOMED AT GUTHRIE.

Because of a desire, as representatives of the contracting company expressed it, that the city of Guthrie, Okla., may be able to retire from the embarrassing position, and to make it possible for residents along almost two miles of city streets to escape from contracts to pave the streets with single course brick, the Hill Construction Co., at a special session of the city council, waived all its contracts along these streets, the total contracts amounting to $180,000. There was but one condition and that is that new bids be advertised for at once following plans and specifications for double brick and asphalt, which were in effect at the time the original contracts were awarded, and that the successful bidders on new paving on the streets which the Hill company had under contract, pay the Hill company the actual amount which the company has expended in grading and hauling material on the streets.

Negotiations looking to this end have been in progress for a number of days and the agreement has been reached between City Attorney Green, Mayor Farquharson and members of the council, and C. E. Garvin and other representatives of the Hill Construction Co.

Immediately after the Hill Construction Co. had waived its contracts, the council passed resolutions ordering the paving of First, Division, Maple, Warner and Vilas streets with either asphalt or double course brick, as has been requested by residents along the streets named.

Previous to the waiving of the contracts the council, by resolution, adopted plans and specifications for additional street paving contracts, to be advertised in the near future and which are to be paved with natural asphalt, thus eliminating the possibility of oil asphalt being used in Guthrie paving.

Messrs. Garvin, Nichols and Levy, of the Hill Construction Co., advised the council not to experiment with oil asphalt, after it became known that under the plans and specifications it might be possible for companies putting down such paving to make bids. The city chemist stated that he was of the opinion that there might be oil asphalts which would be satisfactory, but in closing his remark said that with natural asphalt there was a better opportunity of securing a first-class pavement.

Contracts for paving on those streets, which in the past were under single course brick, are to be let under the same plans and specifications as those adopted for the first paving and which were advertised for last December, while contracts on other streets are to be awarded under the new plans and specifications proposed by the city engineer and city chemist and which were adopted last evening.

POTTERY NEWS ITEMS.

The Artistic Porcelain Co., Trenton, N. J., has brought suit against Noah W. Bach, trading as the American Porcelain Works, also of Trenton, to restrain him from manufacturing white porcelain door knobs.

The Grafton Pottery Co., Grafton, W. Va., is the name of a new pottery with $50,000 capital stock. Two kilns will be built. W. R. Williams, secretary of the Board of Trade, can give information.

O. J. Walburn, who has been for several years with D. E. Abbott & Co., has accepted the place as treasurer of the H. R. Wyllie Pottery Co., at Huntington, W. Va.

The manufacturing potters, according to a prominent potter of East Liverpool, O., are satisfied with the new tariff on pottery, which is about the same as the Dingley tariff.

Michael Hilfrich has placed an order for one million brick to be used to build another pottery at Evansville, Ind. The plant will be at St. Joseph Ave. and West Maryland Street.

OMAHA THREATENED WITH BRICK FAMINE AS RESULT OF COUNCIL'S ACTION.

Omaha is now face to face with a brick famine.

Shortage in the brick supply has already been felt by local contractors and John Latenser, architect for a number of the larger business buildings now being erected, is authority for the statement that contractors will do well if they get through the year without having to cut down their forces, to say nothing about stopping work altogether for a time.

The shortage in material is largely due to the legislation of the old democratic council, which prohibited the location of more brick yards in Omaha and those now in the city are utterly unable to furnish all the brick needed in Omaha this year. Sioux City brick yards have been "milked dry" and nearly all the brick from the natural gas belt in Kansas has been contracted for. Freight rates prohibit buying brick at points farther removed from Omaha.

Caldwell & Drake, the contractors for the new court house, are in about the best shape of any of the contractors, according to Mr. Latenser, as they have enough material to keep going for sometime. They bought about half their brick in Sioux City, intending to buy the rest in Omaha. The Thompson & Starrett Co., contractors for the Brandeis theater and office building, hoped to secure all the brick they needed in Omaha, but, with the local yards working night and day, a full supply of material is away short. Sioux City brick was bought exclusively for the large addition being built to the academy of the Sacred Heart, while Kansas gas belt brick was bought for the block long addition to the St. Joseph hospital.

"Sioux City has no more brick to sell, I understand," said Mr. Latenser, "and the giving out of the supply of natural gas in Kansas has practically stopped the manufacture there. Local yards are utterly unable to meet the great demand made this year by building contractors, and with so many buildings of all kinds, from small brick flats and store buildings to sky-scraper office buildings, we will do well if we get through the year.

FIRE HORSES GO TO BRICKYARD FIRE WITHOUT DRIVER AND ONE WAS KILLED.

Responding to an alarm of fire at 11 o'clock at St. Louis, Mo., the horses of Engine Company No. 35 dashed out of the engine house without the driver. One got so badly injured in a fast run it had to be shot by a policeman and its companion probably will not survive the injuries it sustained.

The alarm came from the Superior Press Brick Co., on King's Highway. The fire was a small one and $10 will cover the damage.

The horses, among the best trained in the department, and known as Grandpa and Morocco, as soon as the alarm sounded, made a quick trip to their stations. When the harness dropped upon their backs they rushed out of the house, at Sublette avenue and Arsenal street. Driver Tom Weaver was left. Ladderman Octavius Treeloux attempted to stop the horses as they rushed by him. He was knocked down and bruised.

The horses, with the driverless engine, made straight east on Arsenal street toward the fire. Near Oak Hill Bridge the engine collided with a Tower Grove car. Motorman F. E. Odell jumped from the car and was not injured. No one was hurt in the collision except the horses. The car was somewhat damaged, as was also the engine. Grandpa was the horse which was killed.

The Ohio Galvanizing & Mfg. Co., at Niles, Ohio, make a steel pallet that is built right, the price is right, and if you are interested you can write to them.

SAND OR LIME BRICK OR BLOCK NEWS.

William R. South, of Ogden, Utah, has installed a cement brick plant at Trenton, and is now operating same.

The Madelia (Minn.) Cement Tile Works will double the capacity of its works so as to keep up with the demand.

J. R. Harrington, manager of the Edinburg (Ill.) Light, Heat and Power Co., is building a concrete block and tile factory on the site of the old stock yards.

The Plymouth Cordage Co., at Plymouth, Mass., will require 2,400,000 brick for their new mill No. 3, and will make sand-lime brick on the premises for same.

The Frahm Fuel & Construction Co., Davenport, Iowa, are now turning out building brick made of concrete. The new plant costs $8,000 and makes 20,000 brick daily.

The Eaton (O.) Cement Tile Co., has been incorporated with $20,000 capital stock by F. B. Austed, H. M. Young, C. M. Austed, W. E. Young and S. E. Young.

The Kentucky Unit Brick & Tile Co., Louisville, Ky., recently reorganized, will shortly begin the erection of a plant to cost $100,000. New machinery has been purchased.

Paul Fuchs, 611 Carmen Avenue, Chicago, a specialist for the sand-lime brick industry, has closed a contract for a complete plant in the southwest also one for western Canada.

The Iowa Cement Tile Co., Ft. Madison, Iowa, have a plant at Second and Bluff Streets. The officers are T. P. Hollowell, E. N. Jack and C. Queberg, the latter being the manager.

The Wiebe Engineering Co., 170 Broadway, New York, has been organized by Sigurd Wiebe and others to design and build factories for the manufacture of high grade silica brick, etc.

Edward E. Klooz, who has been for eleven years the superintendent of the Brier Hill Iron & Coal Co.'s cement plant, will be transferred to the Portage Silica Co.'s plant at Mahoning, Ohio.

The Fremont (Neb.) Granite Brick Co. have let the contracts for the reconstruction of their sand-lime brick plant which recently burned to the ground. The managers visited many plants in all parts of the country.

The White quarry, a mile out of Amherstburg, Mich., has been purchased by Detroit, Mich., business men who are planning to build a big plant for the manufacture of a patent brick as well as soda ash plant.

The International Sand Lime Brick & Machinery Co., 90 West Street, New York, have the contract for a complete plant to be built in the east. The division method used by them makes a very fine sand-lime brick.

The Enameled Brick & Concrete Co., Seattle, Wash., has commenced work at its $300,000 plant at Richmond Beach, twelve miles north on the Great Northern Railway. R. M. Moody is president and Henry Gay superintendent. Frank Stehm, of Des Moines, Iowa, and the company behind him are the makers of the machinery. The Seattle office is in the New York Building.

The Mueller Mosaic Co., Chambers and Cedar Streets, Trenton, N. J., is doing a splendid business, making a specialty of an entirely new application of faience enamels for the exterior and interior of buildings. A large order is now being filled for a large office building for Louisville, Ky.

MISCELLANEOUS ITEMS.

The Canton (Ohio) Sagger Clay Co., has been incorporated with $5,000.

The Wellston (O.) Coal & Brick Co., has increased its capital stock from $75,000 to $250,000.

A fire brick plant is talked of for Williamsport, Pa., to be located up Hyner Run on land owned by ex-Mayor S. N. Williams, of Williamsport.

The Coliseum Co., of Des Moines, Iowa, have contracted for $40,000 worth of brick, with the Flint Brick Company, to be used for the walls of their big structure.

The Northern Michigan Brick & Tile Co., St. Ignace, Mich., will soon have their new plant ready to manufacture brick. Ed. A. Reavie, formerly of Laurium, is the manager.

The Hibbard Brick Co., Kearney, Neb., is working night and day to keep within speaking distance for the demands for their product. They now have orders ahead for 1,750,000 brick. The brick are of a very fine quality.

The Wise County Brick Co., Bridgeport, Texas, will soon have a kiln capacity of 500,000 brick. They are now building a kiln that requires 1,000,000 brick for its construction. They have a fine bed of shale that is inexhaustible.

The New Jersey Clay Pot Co., Vineland, N. J., has given out a contract for the erection of brick buildings in which to manufacture pots and fire clays used in the glass trade. It will be the first factory of the kind east of Pittsburgh.

The Raleigh (N. C.) Pressed Brick Co., is now making 40,000 brick daily. They have a splendid equipment and work 35 skilled workmen throughout the season. T. T. Hay is president, and J. W. Jennings superintendent of the plant.

The D. H. Haeger Estate will manufacture this year 550 car loads of brick and tile at their Gilberts, Ills., plant. This will be the most successful year in the history of the plant. Over $15,000 has been expended in improvements to the plant and 35 men are employed the year around.

The Brooksville (Fla.) Brick Co.'s plant, a $40,000 investment, is ready to be operated as soon as the rainy season lets up. The plant is up-to-date in every respect, the clay has stood the tests and a large output has already been contracted for. R. L. Davis is interested in the property.

Consul George A. Chamberlain, of Pernambuco, Brazil, reports that the municipal council of Recife (Pernambuco) has prohibited the use of glazed tiles on the fronts of houses within the city limits. The law carries no explanation, but it is supposed that the prohibition is based on the ground that the glare from the tiles is detrimental to the eyesight.

The plant of the Hydraulic Brick Co., of Menomonie, Wis., is now being operated by electricity from the power plant. Steam power is retained only for the drying machine. The installation of a complete fire equipment is also about completed. The company has its own mains and hydrants and the supply is obtained from its own wells.

Haigh's New System of Continuous Kiln Arranged to Suit all Locations

These Kilns can be seen burning Roofing Tile, Drain Tile, Dry Pressed Facing, Fire, Paving and Common Building Brick

Points of Superiority: Cheapness in construction. Easy to understaud and operate. Perfectly free from any nuisance. Will save more than one-half of the fuel used on other Kilns Specially adapted for Utilizing Waste Heat for Drying Purposes, and which is being done most successfully

Address, H. HAIGH, Catskill, N. Y.

The Buckeye Clay Pot Co., Toledo, Ohio, has been incorporated with $100,000 capital stock by H. W. Fraser and others.

The Girard (Kansas) Brick & Tile Co. have just turned out their first kiln of brick. They are fine brick and better than was expected.

The brick plant of the York Portland Cement Co., located at Spencer, Ohio, resumed operations after being closed down to make repairs.

South Haven, Mich., is attempting to secure the Mulliken (Mich.) Brick & Tile Mfg. Co., for that place. The managers say they will move if a substantial offer is made them.

The Praton Brick Co., Attica, Ind., is making heavy shipments of paving brick to the Chicago City Railway Co., which is one of the largest users of paving brick in Chicago.

Albert Jay, who has operated the Bessemer (Ala.) Brick plant for the past three years, has sold the plant to Frank Holt, and same will be thoroughly overhauled and put into first class condition.

The Gay Head Fire Brick Co., are steadily proceeding with the work of clearing their property at Pottersville, Mass., of the old buildings and kilns and intend to erect thereon a $25,000 hotel.

The Moist Proof Brick Co. has been incorporated at Norfolk, Va., with $10,000 capital stock, by E. L. Pelot, president; R. E. Pelot, vice-president, and Gertrude Pelot, secretary and treasurer.

Guy H. Powell, of Warroad, Minn., is in communication with parties from the east concerning the establishing of a brick and tile plant at that place. All the parties seem to want is proof of the right kind of clay in sufficient quantity and a site.

The Commercial Club of McIntire, Iowa, are interested in the establishing of a brick and tile plant at that place and the prospects are good provided good material in large quantities is found, that will be satisfactory to a large Iowa brick and tile manufacturing company.

The Empire Brick Plant, at New Albany, Kansas, has been bought by Mrs. L. L. Worth, of St. Louis, Mo., and T. L. Certain and Samuel Blinn, of New Albany as trustees. A new organization will be incorporated with $50,000 capital and the plant will be started soon as possible.

The Armstrong (Iowa) Brick & Tile Co. has dissolved by consent of its stockholders.

The employees of the Holdeman, Ky., brick plant, went on a strike and the plant is being guarded by an armed force of deputy sheriffs.

The Shackelford Brick Co., at Des Moines, Iowa, expect to have their $75,000 continuous kiln in operation by the first of September.

The Ft. Smith Vitrified Brick Co., owned by Yoke & Brown and others, have started their first kiln at their plant at the new town of Arkoma.

The Albion (Ill.) Shale Brick Co. has been incorporated with $20,000 to manufacture paving and building brick. The interested are L. L. Emerson, Walter Colyer and H. J. Strawn.

The Rome (Ga.) Brick Co. has started the rebuilding of their plant which was destroyed by fire some weeks ago; $30,000 insurance was collected. The plant will be rebuilt larger than ever and give employment to 150 men.

Pittsburgh capitalists, with J. M. Porter at the head, have completed plans for a 100,000 capacity paving brick plant at the new mill town of Weirton, Hancock Co., near New Cumberland, W. Va. The machinery has been purchased.

The Alabama Fire Brick Co. stockholders met in their office at Riverside, Ala., and voted for the issue of $30,000 bonds to complete the plant. H. C. Alford is president, John F. Baldwin was elected vice-president, and C. F. Wittichen secretary. The company has a fine deposit of fire clay.

NOTICE

The Trade Mark

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is registered in the U. S. Patent Office and is our exclusive property It brands our best burned clay products. All manufacturers and dealers, except those selling our goods, are warned against infringement.

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All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue W. C.

American Process Co.,

68 William St. NEW YORK CITY

A practical brick maker is considering De Queen, Ark., as a location for a brick factory.

The plant of the Hollywood Brick Co., just east of York, Pa., has resumed operations after a shutdown of four weeks.

The Parsons, Kansas, brick factory, which has been idle for two years, has been reopened and giving employment to 65 men.

The Standard Brick Co., Macon, Ga., has built six large down-draft kilns especially constructed to burn paving brick, costing $20,000.

Experts have been testing the shales near Heltonville, Ind., and find that they will make fine brick and tile and a plant will be established there.

The plant of the Zanesville (O.) Tile Co. was sold on the front steps of the court house at Zanesville on the 26th inst. The liabilities of the company are $70,000.

It is reported that J. D. Avery, of Cliffwood, N. J., has purchased the Stegmayer Enamel Brick Works at South Amboy, N. J. The plant is owned by Connecticut parties.

The Hoffman Diamond Brick & Lath Co., Whitefish, Mont., are burning their second kiln of 180,000 brick and are having a great demand for brick from that section of the state.

The plant of the Muscogee Brick & Terra Cotta Co., at Columbus, Ga., was sold at public outcry by the trustees and was bought by a representative of the bondholders for $45,000.

The Bloomsburg (Pa.) Shale Brick Co. has been incorporated to build a modern brick plant on Fifth street east of Oak Grove. The incorporators are C. H. Reinard, John A. Whitney and Jas. T. Goodwin.

The Penton Brick Works, owned by W. L. Ewen, of Alloway, N. J., which has been idle for a number of years has been leased by a Wilmington, Del., firm and will be opened at once. Salem is the postoffice for Penton.

C. C. May, of Galveston, Texas, has contracted to move his brick works to Penn City, a new town to be constructed below Houston, Texas, on the ship canal. The plant must be in operation by October 1st. Free site and clay will be given to him.

The stockholders of the Kansas Vitrified Brick Co., Chanute, Kansas, recently elected the following officers: J. C. Carpenter, president; Henry Yochey, vice-president; C. T. Beatty, secretary, and Miss Helen Beatty, treasurer. The plant is leased to the Hydraulic Press Brick Co.

The Barr Clay Company, Streator, Ill., have let a contract to wire and equip the complete plant with electrical machinery. Four hundred horse power current will be generated and used in the plant.

The plant of the Fromsburg (Mont.) Brick Co., is running to its fullest capacity and the plant has orders booked ahead for 1,000,000 brick and refused orders to that number. F. H. Church is the manager of the concern.

The Rich Hill (Mo.) Brick & Tile Co., the management of which has heretofore devoted its time to making drain tile, is now turning out building and paving brick of fine quality. The company has booked an order for one-half million paving brick from an eastern concern.

The Blandon (Pa.) Clay Co. is erecting a large building to be used for drying and preparing clay for the market.

The Post Pipe Co., Texarkana, Ark., has been obliged to build additional kilns so as to take care of the demand for their sewer pipe and tiling.

The Scott Manufacturing Co., 1815 Third National Bank Building, St. Louis, Mo., have their ad. in new dress on page three of this issue. Investigate.

The Sedalia Clay Mfg. Co., Sedalia, Mo., for a dry pan, elevators, continuous kiln equipment, clay dryer, clay gatherer, and an electrical equipment.

The Defiance (O.) Tile Co. has been organized with $10,000 capital stock by H. G. Monen, Lillie Monen, K. C. Thompson, G. DeVeaux and Robert Newbegin.

The City & Suburban Homes Co., Ltd., Detroit, Mich., has sold 30 acres of land on Michigan avenue beyond the city limits, for an up-to-date brick plant of large proportions.

The Mutton Hollow Fire Brick Co. has purchased the old Flood-Mundy farm of eighty acres between Woodbridge and Metuchen, N. J. The office is in Woodbridge.

On page 41 is illustrated a battery of dry pans as installed in an eastern plant by the Means Foundry & Machine Co., of Steubenville, Ohio. They ask you to investigate the merits of this pan.

E. M. Freese & Co., 142 South street, Galion, Ohio, have a new announcement to make on page 11. The company has just sold a splendid order to go to a well known Ohio river manufacturer.

The Standard Preservative Co., Jersey City, N. J., has been incorporated with $200,000 capital stock to manufacture tiling. The incorporators are Fred L. Whitner, H. B. Mahn, and H. C. Roundtree.

The P. Hayden S. H. Co., Columbus, Ohio, make a line of machinery that ought not to be overlooked. The word Hayden means good workmanship and that is what we are after when we buy our machines.

The Wilson Kiln & Dryer Co., Philadelphia, Pa., write that they have about all the work they can handle for several months. That they are installing many of their kilns and dryers. Write to them if interested.

The Clay Products Co., Texarkana, Ark., are doing a big business manufacturing jugs and earthenware of all sorts. They also manufacture a water filter that finds a ready sale in all parts of the country.

If you are thinking of burning brick with oil you should at once consider the oil burner. The one we hear the most about is the Schurs perfect oil burner. It is made at Los Angeles, Cal., by John Schurs, who is an expert in that line.

The Mahnken Building Material Co., of Brooklyn, N. Y., has been incorporated with $300,000 capital stock. The directors are J. H. Mahnken and C. W. Mahnken, of Freeport, and D. W. Moore, J. E. Sparrow and A. H. Krusa, of Brooklyn.

Fiske & Co., New York and Boston, have a new trademark for their clay products. Same is registered in the United States patent office and must not be used by any other manufacturer or dealer. A notice to this effect can be found on page 34 of this issue.

FOR SALE

One Penfield power Repress in first-class condition, capacity 10,000 per day, used only one month, write for particulars.

American Enameled Brick & Tile Co.
1 Madisou Ave., New York City.

EXPERIENCED MANUFACTURER WANTED

Thoroughly experienced brick manufacturer to operate and manage modern plant at Washburn, Wis. Best clay, unlimited market; party with some money to invest preferred,

Address Washburn, care of Clay Record,
Chicago Ill,

Second-Hand Brick Machinery For Sale

1 two-mold brick press.
1 three-mold brick press.
1 four-mold brick press.
1 Freise stiff-mud auger machine, pug mill and cutter.
1 dry press mixer.
2 small engines.
Let us know your wants.

Scott Manufacturing Company,
1811 Third National Bank Bldg St. Louis, Mo.

Brick Plant for Sale or Lease

A conveniently located brick plant on the main channel of the James River, 90 miles from Richmond. 18 miles to Newport News, and 40 miles to Norfolk, all having a good steady market for brick. Easy transportation for large boats. Want to see plant in operation. Therefore would make very easy terms. Address MRS. AGNES L. TURNER,
Ferguson's Wharf, James River, Va.

WANTED

A two, three or four mold Dry Press, second hand but in perfect order. Address
"Dry Press" Care of Clay Record.
Chicago, Ill.

MOLDERS WANTED

We have steady work for eight good brick and tile molders. Bright foreigners given eqnal chance.
Chicago Retort & Fire Brick Co.,
Ottawa, Ill.

FOR SALE

Plans aud Rights of Round Down-draft Continuous or Semi-Continuous Kilns. Both types possess new and improved features Address
William Radford,
Phoebus, Va.

POSITION WANTED

As general superintendent or general manager of a large brick works--Or the planning and building of a large plant. Twenty years experience with all kinds of clays and shales and all processes from mud to dry process yards. All styles of wood, coal and gas kilns. Understands the business thoroughly from clay pit to office work. Also competent in Sewer pipe and architectural Terra Cotta Manufacture. Address Brick Yard Supt.
Office 56, No. 84 Washington St.
Chicago, Ill.

DRY PRESS FOR SALE

We have for sale one American four mold dry press, as good as new. A bargain if sold at once.
Des Moines Clay Mfg. Co.
Des Moines, Ia.

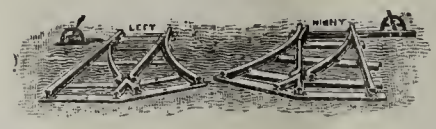
BRICK PLANT FOR SALE

Well known and good market in the city of Minneapolis. Plant is running at present. Will sell equipment and yard iucluding horses. If deal is made quick owner can make brick this fall for spring trade. Address
Minnesota, care Clay Record,
Chicago, Ill.

FOREMAN WANTED

Foreman wanted for a fire brick plant, one competent to take charge of hand molding and setting. In reply state age, experience and salary expected at start. Address
Foreman, Care of Clay Record,
Chicago, Ill.

FOR SALE



Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE

Brick and tile plant; coal and potters' clay mine; all combined in active operation; new machinery, none better; coal and clay, unlimited quantity; superior in quality; suitable for fire brick, enamel brick or fine face brick, terra cotta, tile, sewer pipe, stone ware; and all high refractory material. As to proportion of strata used, it is 25 ft. thick rock top and easy to mine. Clays burn white, buff, gray, brown, and also makes a fine spreckled manganese brick. As to proportion of clay used - best clay in Illinois. Railroad runs direct through center of 900 acres; direct to St. Louis and Chicago. Reason for sale, owner crippled; will sell on easy payments, trade for good real estate, or lease to good, experienced men with capital to operate and increase business: Address,

H. T. M.,
Care of Clay Record, Chicago.

FORCED FOR SALE

Brick yard for sale within six miles of Broad Street Station, Philadelphia, Pa.. every improvement, Penn. Ry. sidings into yard. In operation for orders for about three million brick. Address:

A. B. Co,
Care of Clay Record, Chicago

SECOND HAND BRICK MACHINERY FOR SALE

8 000 new fire brick; 12,000 second hand fire brick.
140 single Grates as good as new, size 3 ft. 9 in.
18 Kiln doors on frames.
60 double Grates, size 3 ft.
10 plain fire doors.
5 Brick Trucks
5 Brick Wheel Barrows.
One 40 H. P. Engine.
One 40 H. P. Boiler in good condition.
Several Pumps. One Bottom Dump Car. 800 ft. Small Rail. 2 Switches. 60 ft. 8 inch Canvas Belting. 52 ft. 6 inch Belting. used one year.
Address,

HENRY EHLERS & BRO.,
Watkins, Minn.

DRYER CARS

We have on hand a lot of secoud hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, Ohio

FOR SALE

One hardening cylinder, 72 ft. long, 6 ft. diameter.
One 4-Mold Andrus brick press.
One 9-foot Scott Dry Pan.
One Cedar Rapids Sand Dryer
25 sand lime brick cars, 3 ft. by 5 ft. top.
2 transfer cars all in good condition.

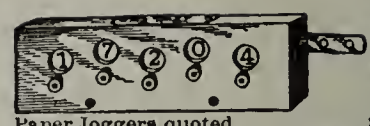
MORGAN BRICK CO.
Norristown, Pa.

FOR SALE

150 Iron Flat Trucks for Cement, Tile or Brick Yard.
One 70-inch Buffalo Forge Fan.
One 180 H. P. Heine Boiler
Two Freight Elevators
The above machinery is in good condition and at a very low price. S. KRUG WRECKING CO.,
Nebraska City, Neb.

WANTED

A young or middle aged man, of habits, strictly good, honest and reliable, one who is experienced in the manufacture of clay products and also able to handle correspondence pertaining thereto, and the use of machinery for the manufacture thereof, for position in sales department of reliable machinery manufacturer. In reply to this advertisement state salary that would be expected and give several references as to ability and character. Address.
Sales Dept. Care of Clay Record,
Chicago, Ill.



No better made, cut from $8 and $10, to
4 Wheel, $3.00
5 Wheel, $3.25
Guaranteed.
Sold by all dealers.

Paper Joggers quoted.
R. A. HART, 41 White St., BATTLE CREEK, MICH.

GOOD OPENING FOR CAPITAL AND EXPERIENCE

For the purpose of making enlargements would like to interest capital in clay plant, have dry press and stiff mud outfits, making fire brick, face brick, hollow building tile, fire proofing and common brick. Located in the west and have a great advantage in freight rates over a good market on fine brick, fancy face brick, tile etc. Have immense deposits of high-grade fire clay, several varieties of shale and unlimited quantities of good surface clay. Would prefer to interest parties practical in clay working and will offer good inducements.

A. N. M. Care of Clay Record,
Chicago, Ill.

BRICK YARD FOR SALE

I have a nice little Brick and Tile Plant that supplies a local trade of 500,000 to 800,000 Brick and 100,000 Tile, 7 acres of fine red burning clay. New 6 room dwelling, new 40 H. P. Engine, 65 H. P. Boiler, Frost make Frost Dry Pan, Brewer Mill, Automatic cutter, Hoisting drum, Steel track, everything in first-class running condition. No debt. Sheds and Buildings newly roofed. 2 good down draft kilns. Stiff mud pallets for 100,000 brick, premises newly fenced with "American Field." Good pasture and fine for truck, right in town. $12,000 would scarcely replace it. Will take $4,900 cash, $2,000 down, time on rest. Would consider an exchange for small well improved property at its low cash value. If this looks right to you come and see it, no time to fool away in correspondence.

C. A. ZANDER,
Rushville, Ill.

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick.
Address,

FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio

Address A. B. care Clay Record.
Chicago, Ill.

FOR SALE

I have a Brick and Tile Plant costing $20,000, Electric Power, Steam Dryer. Make soft mud and stiff mud brick and drain tile. I want a man with a few thousand dollars to take one-half interest in the business If you are looking for a good chance to get into business by investing at 50 cents on the dollar, address

J. J. MILLER,
Benton Harbor, Mich.

FOR SALE CHEAP

One Bullick 100 H. P. Motor, one 9 foot Raymond Pug Mill, one 18 H.P. Gasoline Engine. All nearly new. Address

KIAMENSI CLAY CO.,
Newport Del.

FOR SALE

New Sand Lime Brick Hardening Cylinder, 6 feet diameter by 68 feet long. One removable head. Immediate shipment.

FRANKLIN BOILER WORKS CO.,
Troy, N. Y.

THE BOSS SYSTEM OF BURNING BRICK

Involves the ORIGINAL PRINCIPLE of applying AIR UNDER PRESSURE

Absolute control of heat in kiln. **Burns all first-class hard brick.**
Applies to any style of kiln. **40% reduction in fuel cost.**

JOHN C. BOSS, Monger Building, ELKHART, IND.
WRITE FOR CATALOG

Do Your Brick Turn White?
HERE IS THE REMEDY.
PRECIPITATED

Carbonate (K.B. C.F.H.) **of Barytes**

The only preventative for scum and discoloration on facing Brick and Terra Cotta; neutralizing the Sulphate of Lime in the Clay and Water.

Circulars and Particulars on Application.

GABRIEL & SCHALL
205 Pearl Street NEW YORK P. O. Box 1712

Twenty long years of time and weather have tried out Ricketson's Famous Red Brick" Brand

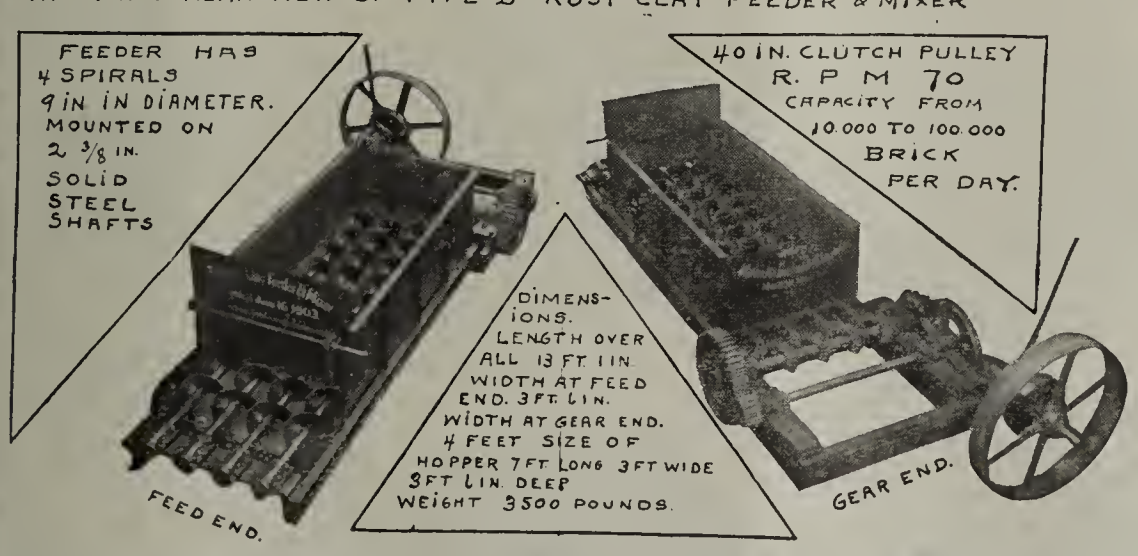
..COLOR..

for Mortar, Brick, Cement, Stone, etc., Proves it Absolutely Permanent. Red, Brown, Buff, Purple, Black.

RICKETSON MINERAL PAINT WORKS
MILWAUKEE, WISCONSIN.

C. K. WILLIAMS & CO.
EASTON, PA.
BRICK AND MORTAR
COLORING

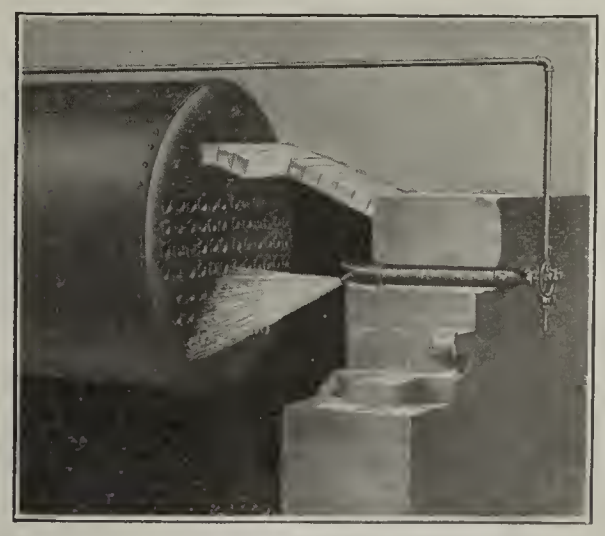
"FRONT AND REAR VIEW OF TYPE "B" RUST CLAY FEEDER & MIXER"



Don't Let Your Profits Run Away

We can save you from $500.00 to $1,000.00 per year, through the use of this modern Clay Feeder.

Write today for our latest catalog fully describing this new **Clay Feeder and Mixer.**



The Marion Flue Blower, (patented February 23 1909) will save 10 per cent of your fuel. It will insure you clean tubes; will prolong the life of the boiler; it will prevent the accumulation of soot; it will save the cost of steam hose; it will enable you to clean your boiler while in commision. The accompanying cut shows how the Flue Blower is installed in the rear wall of your boiler. Each blower is fitted with a nozzle which rotates, and each opening in the nozzle blows a section of the boiler tubes at a time. We furnish different sizes as required, and positively guarantee to blow each flue clean

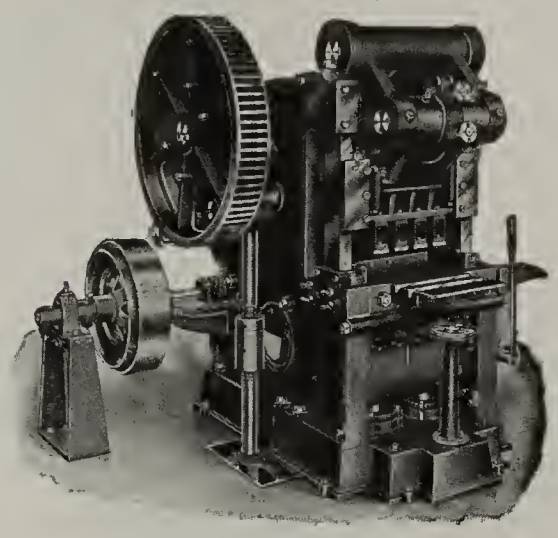
Please send for our latest catalog fully describing this useful invention.

MARION MACHINE FOUNDRY AND SUPPLY CO., - Marion, Inndiana

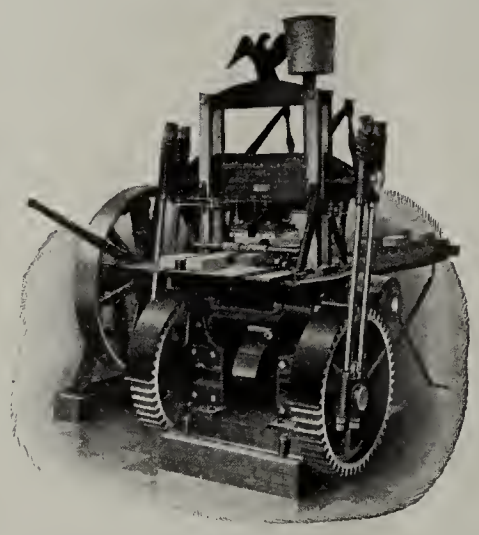
THE AMERICAN CLAY MACHINERY COMPANY

BUILT RIGHT RUN RIGHT

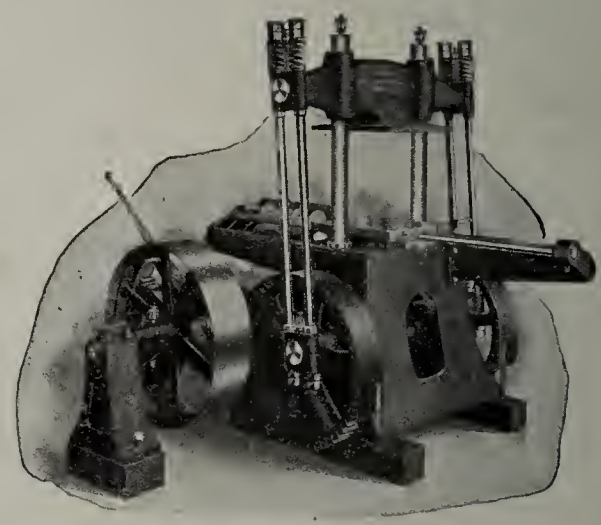
BUCYRUS OHIO, U.S.A.



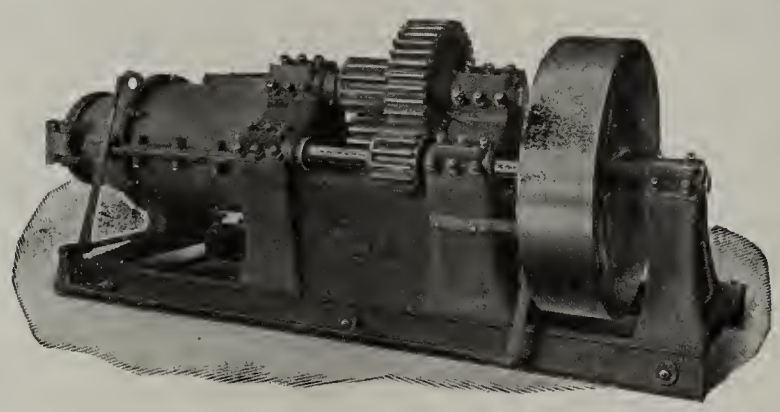
Model "B" Dry Press



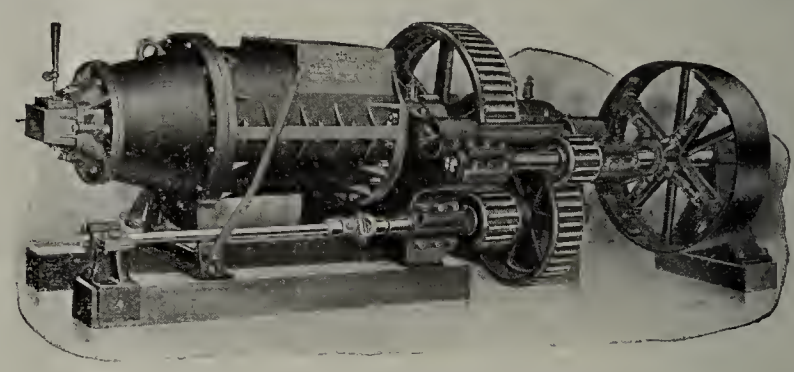
Eagle Repress



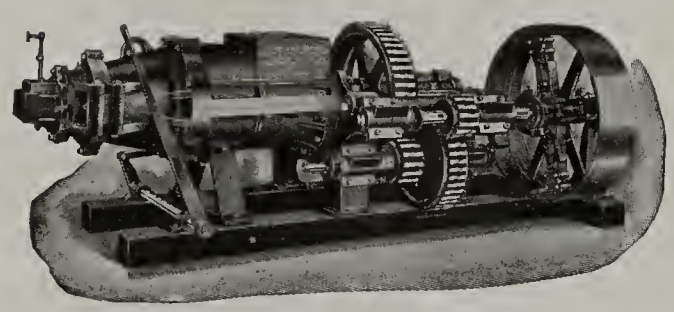
Roofing Tile Press



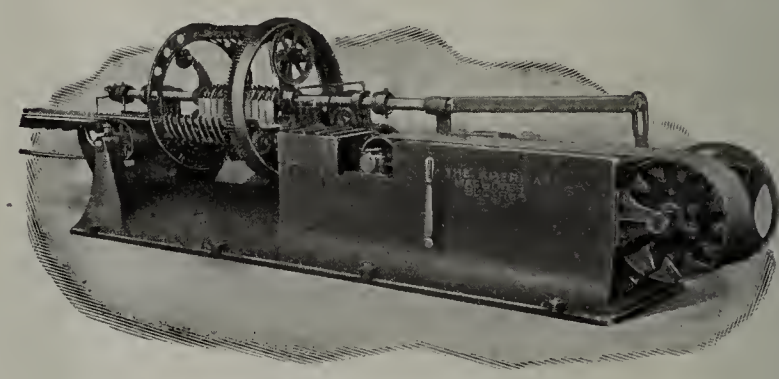
No. 65 Auger Brick Machine



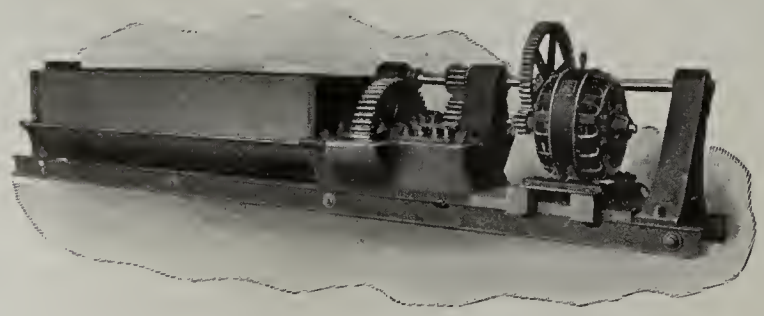
Special Giant Brick Machine



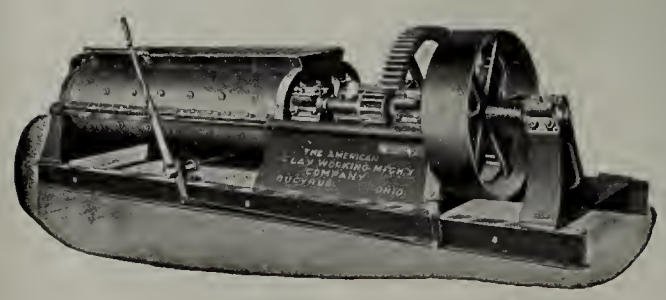
No. 2 Giant Brick Machine



No. 83 Automatic Cutter



No. 51 Electrical Driven Pug Mill



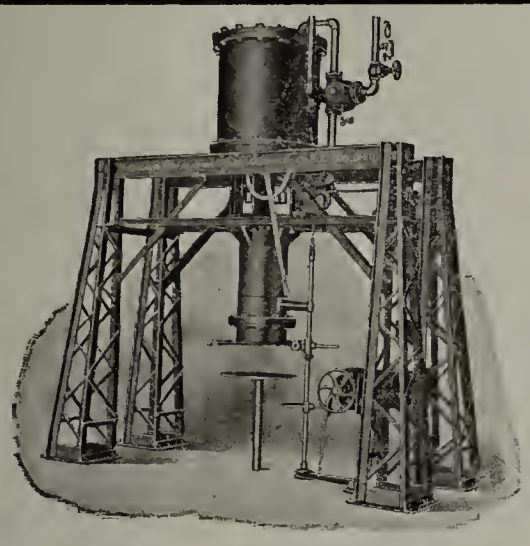
No. 38 Double Shaft Pug Mill

We Build Every Machine and Every Appliance Needed for the Manufacture of Every Class of Clay Products by Every Process

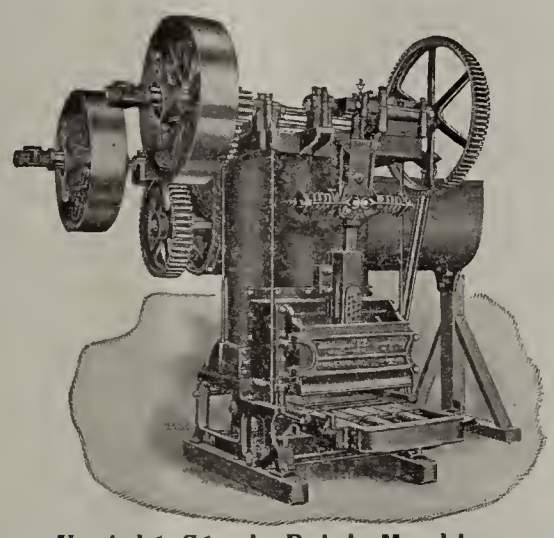
THE AMERICAN CLAY MACHINERY COMPANY

BUILT RIGHT RUN RIGHT

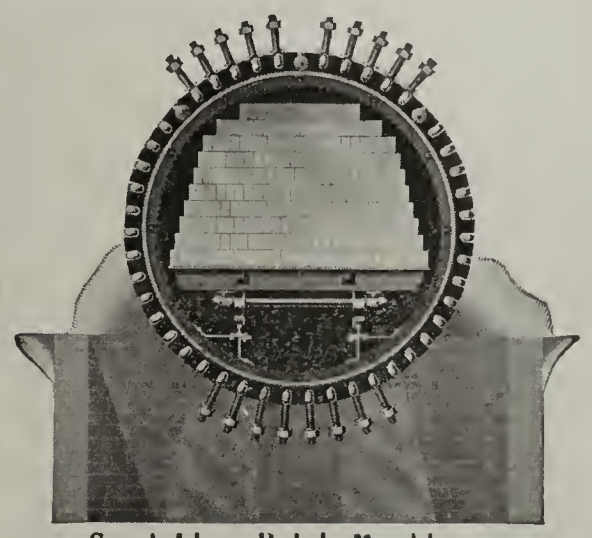
BUCYRUS OHIO, U.S.A.



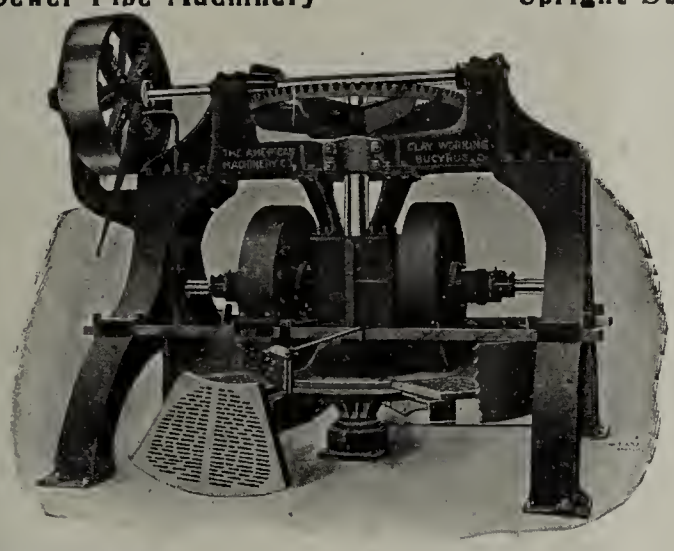
Sewer Pipe Machinery



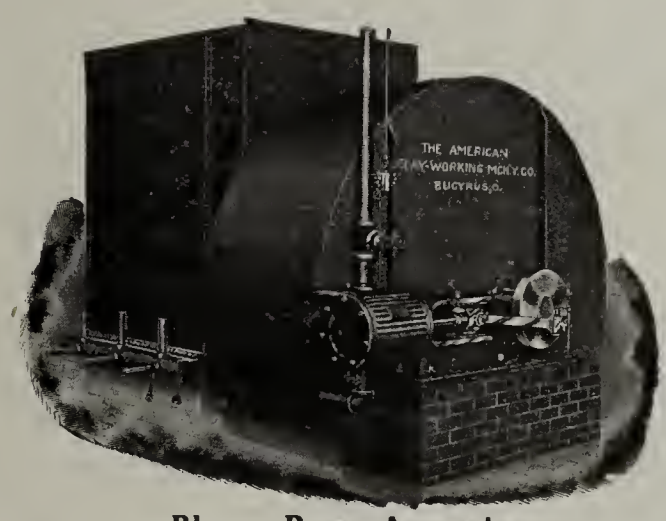
Upright Stock Brick Machine



Sand-Lime Brick Machinery

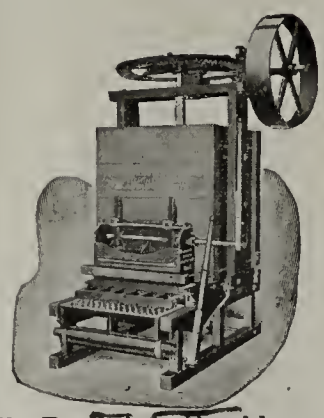


9 Foot Dry Pan

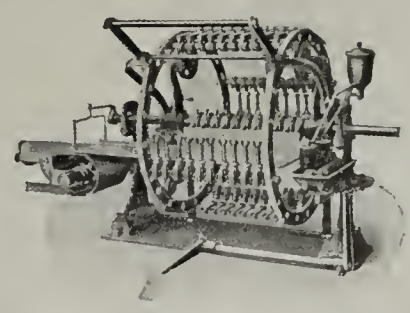


Blower Dryer Apparatus

Mold Sander



H. P. Brick Machine



No. 62 Hand Power Cutter

Dry Cars

Disintegrators

Winding Drums

We are Much the Largest and Much the Most Extensive Manufacturers of Much the Best Clay Working Machinery in the World

Fire Brick——Fire Clay

AND FIRE CLAY PRODUCTS

Manufactured out of highest grade Missouri semi-flint fire clay.
A large stock of Number One brick and shapes always on hand.
Let us quote you prices and we will save you money.
Samples sent upon request. Address

Mexico Brick & Fire Clay Co.

MEXICO, MISSOURI

Something New In Brick Kilns and Dryers

The Dennis Double Chamber Up and Down Draft Brick Kilns and Direct Heat and Hot Air Brick Dryers show many new features that make them superior to all others. Economical, durable and strong in construction and operation, having many points of dvantage that appeal to practical brickmakers. Patented April 14, 1903 and September 8, 1903 Brick plants installed and put in operation. Write for booklet. Correspondence solicited.

F. W. DENNIS,
145 Water St., Norfolk, Va.

Approved and Labeled

Fire! Fire!! Fire!!!
Extinguishers

Protect your Home, Business, Factory

Insurance Reduced. Child can Operate.
Made of Copper. Will Last a Lifetime.

Chemical charges can be procured at any drug store

Write today; don't wait; delays are dangerous.

O. J. Childs Company

Sole Manufacturers — Utica, N. Y.

AMERICAN RING-HAMMER PULVERIZER

Two Models, one for Clay, Shale, one for Rock

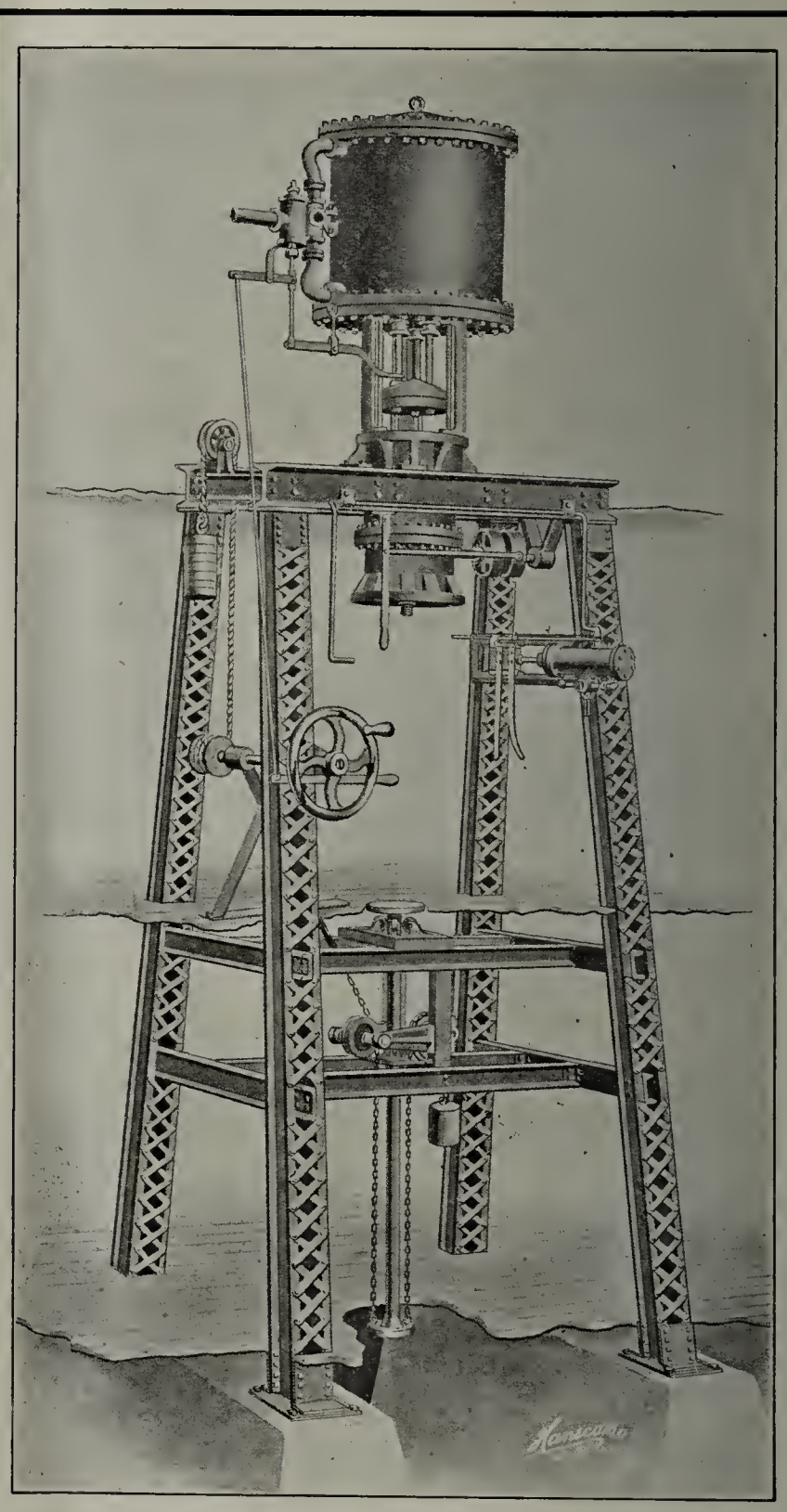
Will pulverize from 4 mesh to 200 mesh, 1 to 50 tons per hour, according to size of machine, fineness required, kind and condition of material.
30% to 60% less 3peed, and 25% to 50% less power, due to the RING and its utilization of CENTRIFUGAL FORCE.
We make six sizes and every machine guaranteed to do the work which it is contracted to do when sold.

Revolving Screens Air Separators
Ask for Circulars and Information

AMERICAN PULVERIZER CO.

Suite 410 Jaccard Bldg., ST. LOUIS, MO.

DISTRICT SALES OFFICES:
F. C. Willis, 36 LaSalle St., Chicago, Ill.
I. R. Coles & Co., 39 Cortland St., New York City.
Lindrooth, Shubart & Co., Boston Bldg., Denver, Colo.



44 X 20 SEWER PIPE PRESS

SEWER-PIPE MACHINERY

COMPLETE EQUIPMENT

THE TURNER, VAUGHN & TAYLOR COMPANY
CUYAHOGA FALLS, O.

REBUILT ENGINES AND BOILERS

The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

ENGINES—Automatic—16x32 Buckeye, 15x14 Erie, 14¼x16 Buckeye, 14½x14 Ball & Wood, 13½x15 Taylor, 13x16 Erie, 12x14 Green, 12x12 N. Y. Safety, 10x10 Fisher, 9½x12 Leffel, 8x10 Allfree, etc.

ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

BOILERS—Stationary—72x18 High Pressure, 72x18 Standard, 72x16, 66x16, 60x20, 60x16, 54x16, 54x14, 54x12, 48x16, 48x14, 44x14, 40x12, 40x9, 36x16, 36x10, etc.

BOILERS—Fire Box—80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 h. p., etc.

BOILERS—Vertical—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 3 h. p., etc.

HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

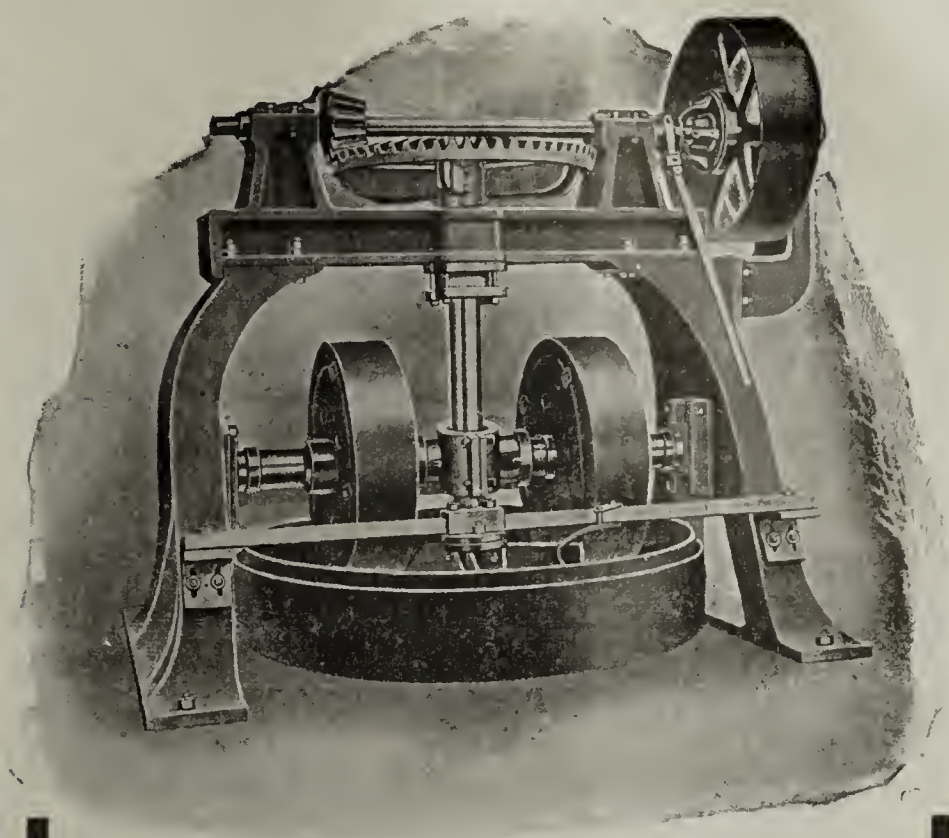
Saw Mills, Lath Mills, Edgers, Cut-Off Saws, Tanks, etc. Write for list.

Also full assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

The Randle Machinery Co.

1732 Powers Street **Cincinnati, Ohio**



PHILLIPS & McLAREN CO. PITTSBURG, PA.

BUILDERS OF

Pittsburgh Standard Dry and Wet, Revolving and Stationary Grinding Pans for Brick, Cement, Sand, Terra Cotta and all kinds of Refractory Materials.

ROCK AND ORE CRUSHERS

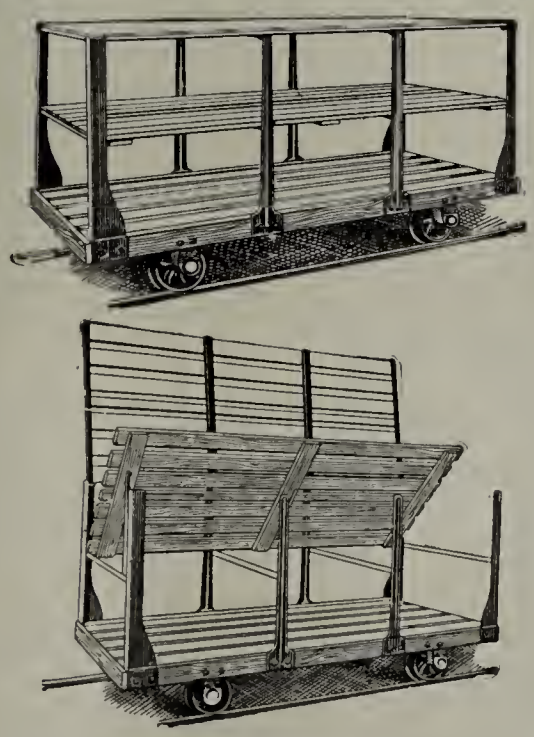
When writing for prices state kind of material and capacity required.

Eastern Offices

Stephen Girard Building, Philadelphia, Pa.

The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices



Vulcan Iron Works MASON CITY, IOWA

"A CHANGE IN FLUES MAKES THE DIFFERENCE IN DRYERS"

POTOMAC BRICK COMPANY

1413-G Street, N. W.

ELLIOTT S. MORSE, Gen. Mgr.

Washington, D. C., March 19, 1909.

THE KING ENGINEERING CO.,
Richmond Va.

Gentlemen:—Our No. 1 10-tunnel Sharer Radiated heat dryer before it was remodeled by you gave us an average of 55 cars per day of dry brick.

You completed the reconstruction of this dryer the latter part of January last. This day we have examined our records and find that our daily average now is 80 cars dry brick.

Yours very truly,

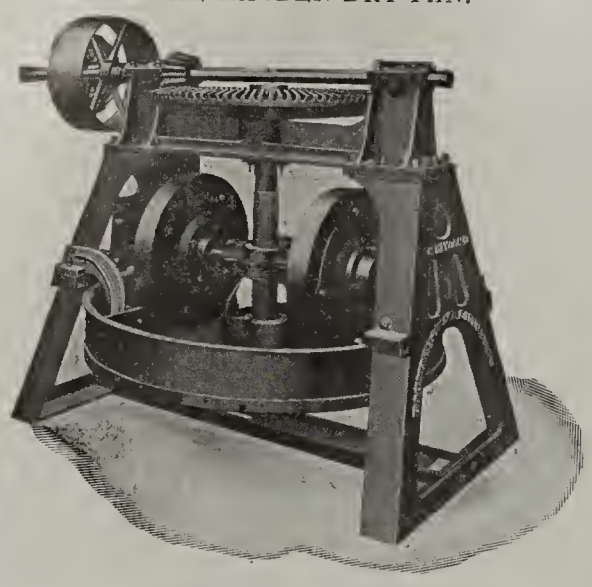
(Copy) ELLIOTT S. MORSE.

That which we have done for the above Company we can do for You. We can remodel any Radiated heat dryer and increase its capacity from 15 to 30 per cent.

THE KING ENGINEERING COMPANY

RICHMOND, VA.

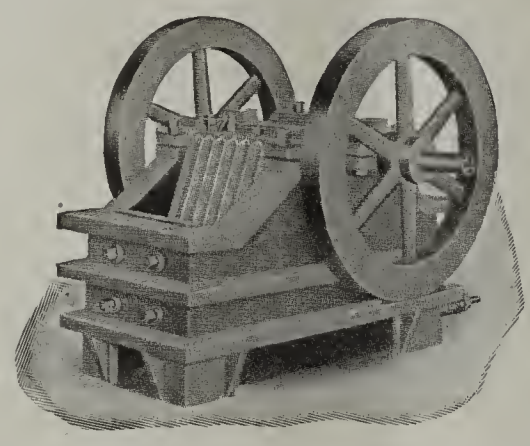
THE HAYDEN DRY PAN.



Masssive and well proportioned.
Best material.
Time tried and reliable.
Large capacity.
Acurate mechanism.
Independent or yoked mullers.

Send for specifications and prices before buying.

THE HAYDEN CLAY CRUSHER



This Crusher is specially designed and adapted for use as an auxiliary to the dry pan.
Capacity 10 to 30 tons per hour.
Simply constructed and the strongest machine of the kind on the market.

Send for circular and prices.

THE HAYDEN
BRICK TESTING RATTLER

For testing paving brick.
Built to the standard specifications of the N. B. M. A.
Best material and workmanship.

Send for descriptive matter.

The P. HAYDEN S. H. CO., Foundry and Machine Dept.

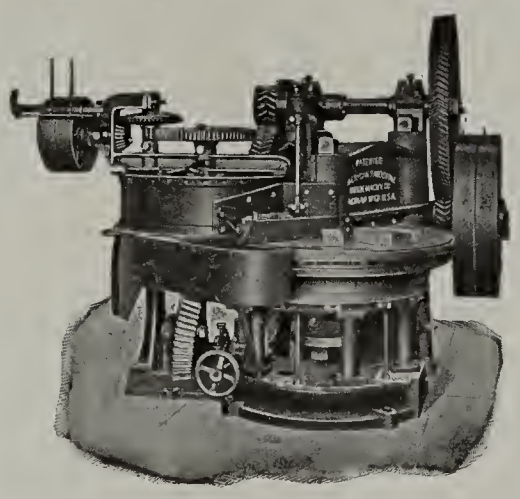
Manufacturers of

WET AND DRY PANS, CLAY CRUSHERS, STEAM CLAY PRESSES, RATTLERS, BRICK CARS, CARWHEELS, AXLES, KILN BANDS, etc.

112 West Broad Street **COLUMBUS, OHIO**

The American Sandstone Brick Machinery Co.

INCORPORATED APRIL, 1902
SAGINAW W. S., MICH.



Improved Saginaw Rotary Presses

Are now being built with extra table for making fancy brick, on which double pressure is exerted.

Don't confuse our Practical System with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant, starting and operating at our expense until at least 100,000 brick are made before asking for a settlement.

Our plants are **installed under the supervision of Practical Engineers who know how Sand-Lime Brick should be and can be made.** We have **Practical Plants Running Successfully** to show to prospective investors.

WE ARE NOT SCIENTISTS

We **Produce Results,** because we are the **Oldest Practical Sand-Lime Engineering Company Doing Business in the United States,** and **we defy contradiction.**

SCHURS Perfected Oil Burners

MOST ECONOMICAL BURNERS ON THE MARKET. DESIGNED ESPECIALLY FOR BURNING BRICK, TILE AND TERRA COTTA.

ADJUSTABLE TIP

Patented
No. 1 BURNER
The "Brickyard Wonder"
For Down-draft Kilns

No. 2 BURNER
For Up-draft Kilns
with handle to adjust tip to suit low and heavy fire

Not an experiment, but a severely tested, well proved burner whose superiority to all others has been amply demonstrated.

Write for Booklet containing full information.

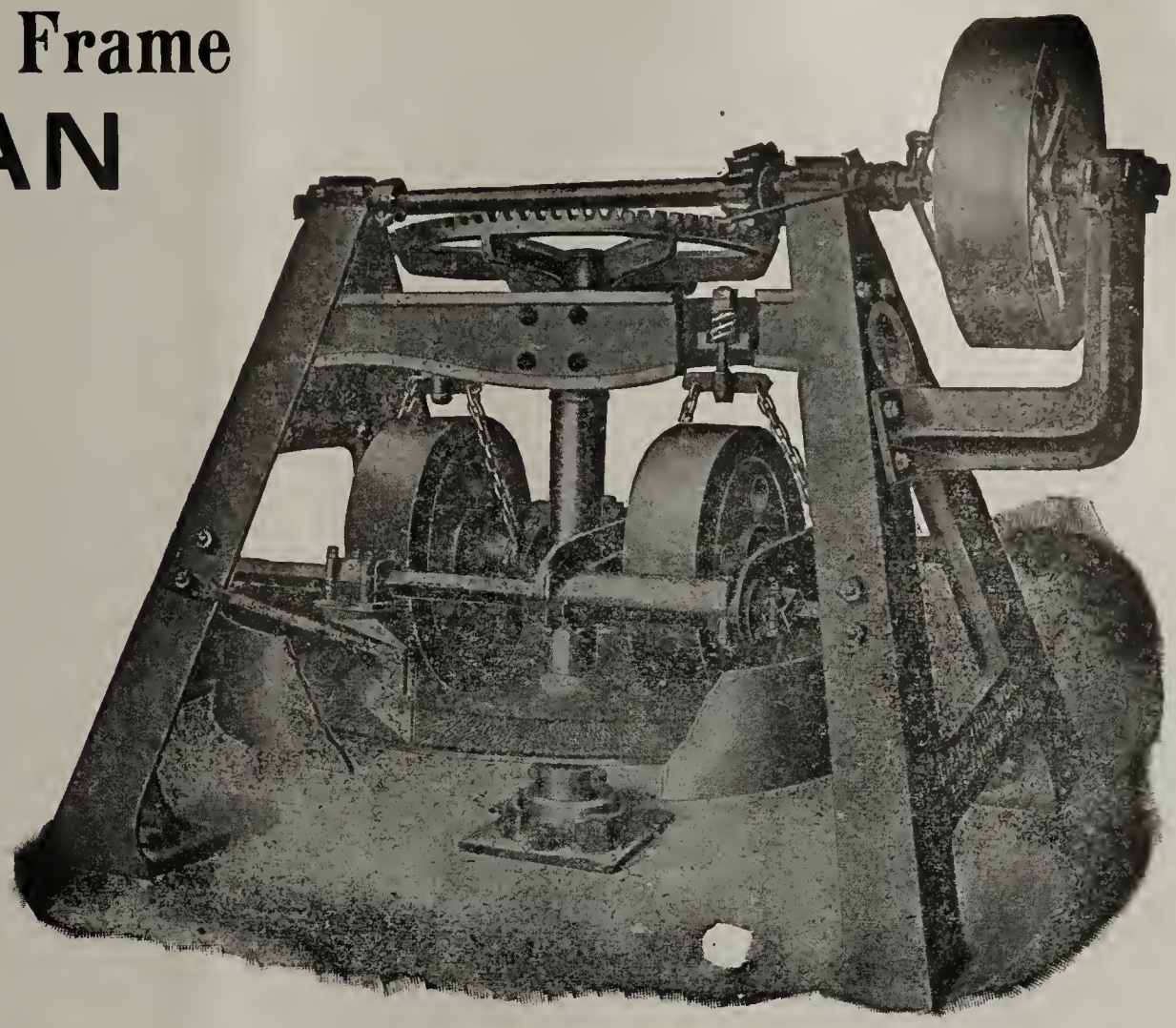
JOHN SCHURS, Patentee and Manufacturer
1007 NORTH MAIN STREET LOS ANGELES, CAL.

Nine Foot Iron Frame
DRY PAN

With Independent
and Suspended

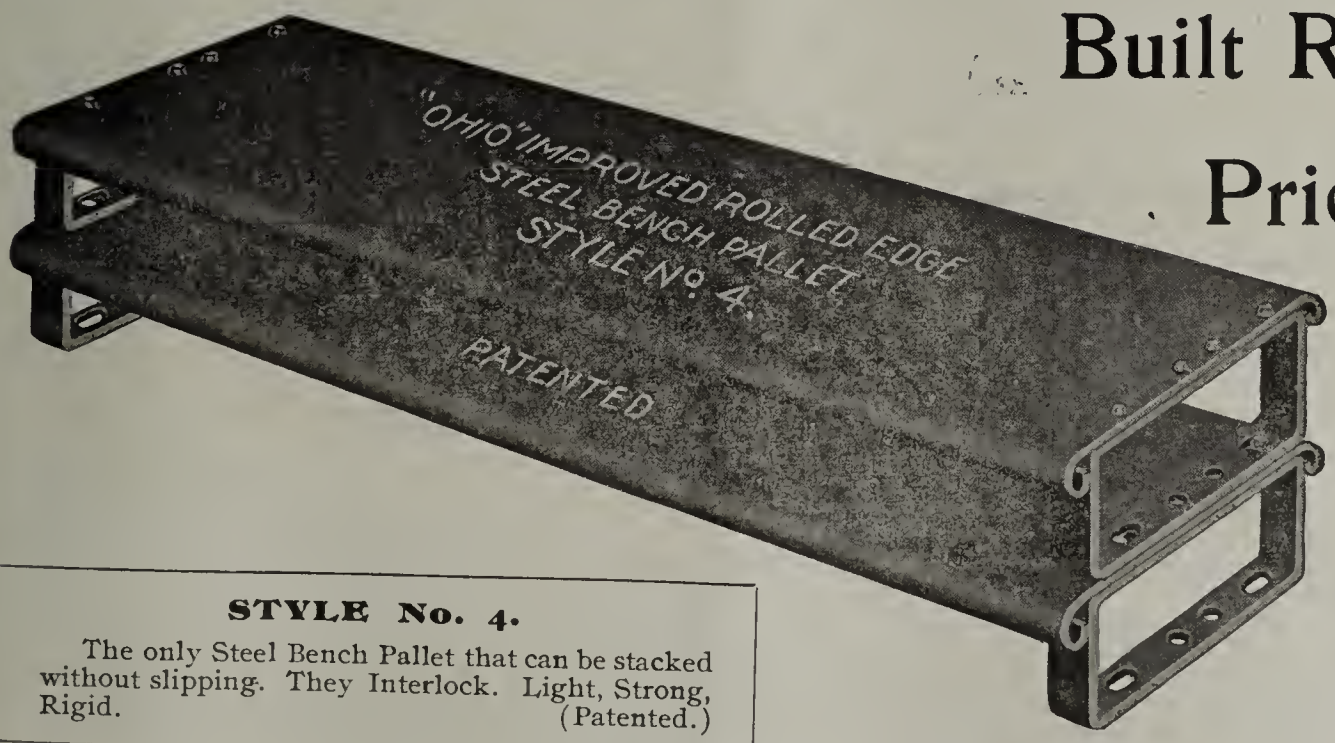
MULLERS

A well-tried and
proven Success.



EAGLE IRON WORKS, BUILDERS, DES MOINES, IOWA

Steel Brick Pallets



Built Right,

Price Right,

Write Us

STYLE No. 4.

The only Steel Bench Pallet that can be stacked without slipping. They Interlock. Light, Strong, Rigid. (Patented.)

ALL STYLES

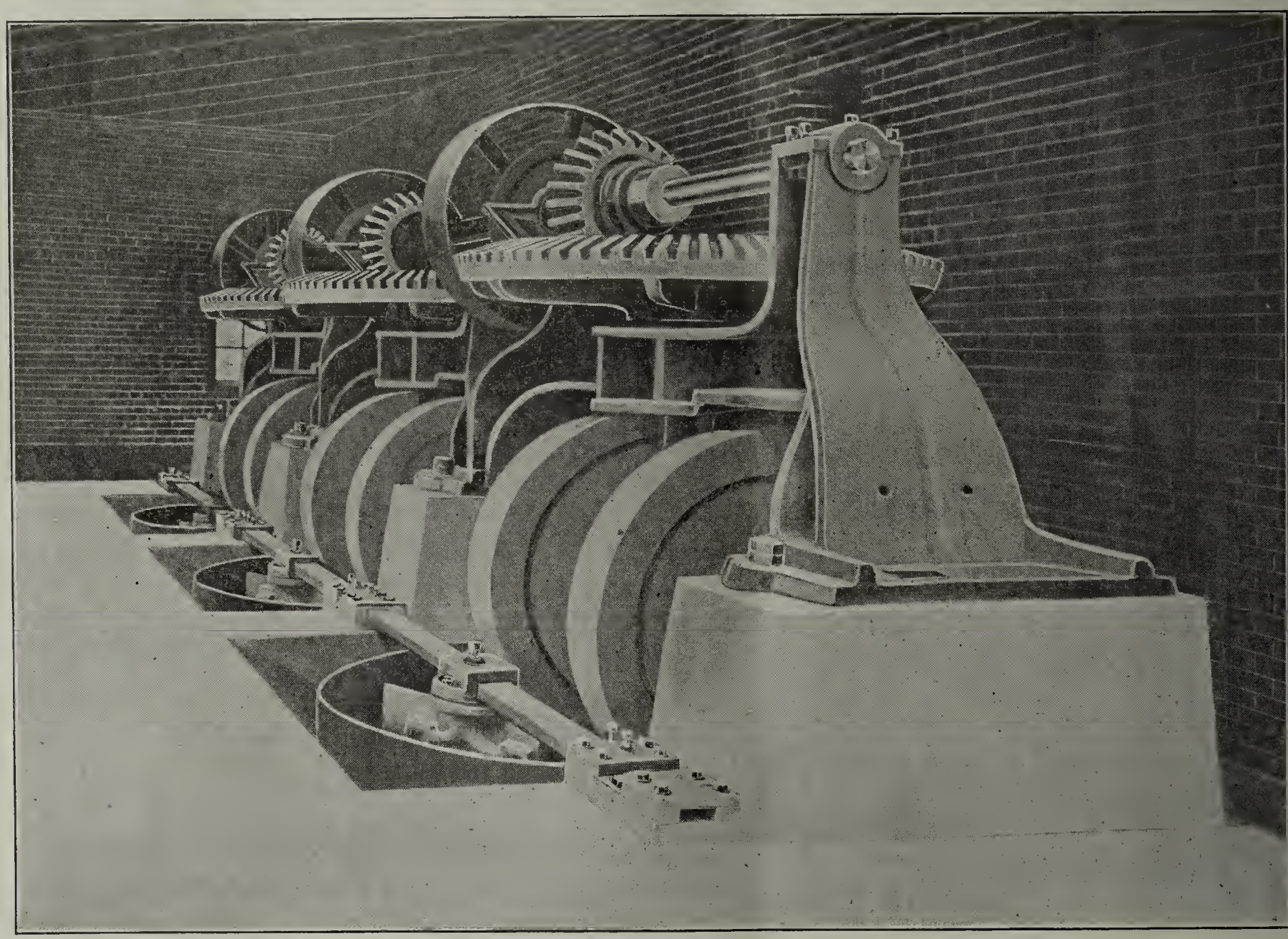
MADE EXCLUSIVELY BY

THE OHIO GALVANIZING & MANUFACTURING CO.

NILES, OHIO

Our Dry and Wet Pans are worth your investigation

We build them eight, nine and ten feet in diameter, weighing 30 to 50,000 pounds. They have great crushing and screening capacities



We also manufacture complete equipment for Sewer Pipe, Brick, Terra Cotta Drain Tile and Fire-Proofing Works

Write for Description and Price

The Means Foundry & Machine Co.

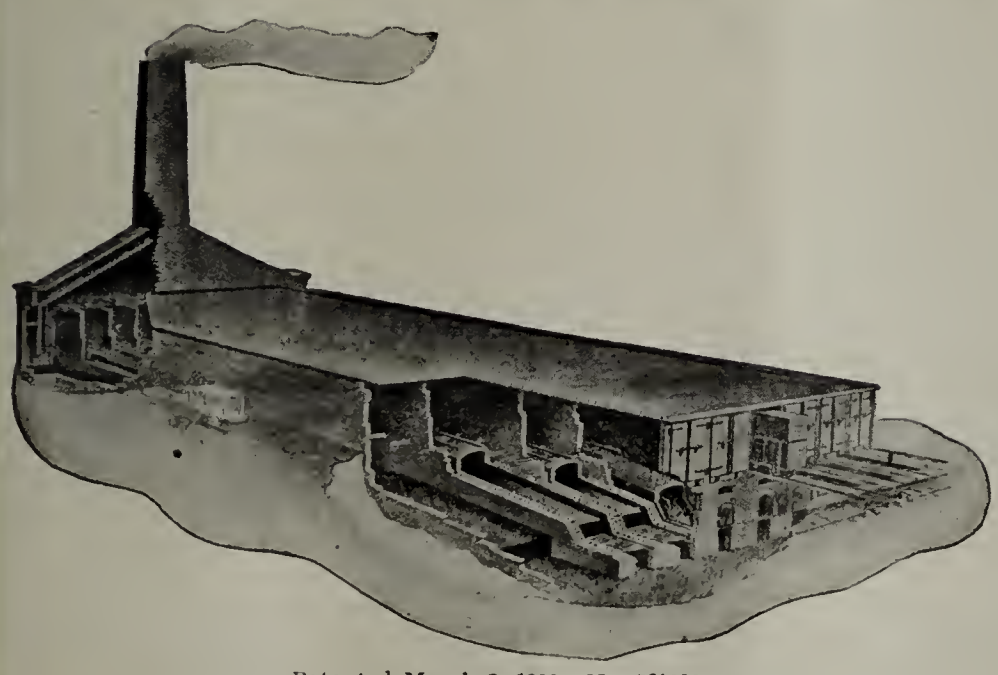
Eastern Agents
WILSON KILN & DRYER CO.
West End Trust Bldg.
Philadelphia, Pa.

Steubenville, Ohio

Wilson Kilns and Dryers

Built by Wilson Kiln & Dryer Co., Capacity 100,000 Brick Per Day.

Patented July 8, 1902



Patented March 3, 1903. No. 721988

Why are we always busy?

Because we study the brick business and build kilns and dryers to suit the conditions.

Our smoke-consuming furnaces, and continuous waste heat system, kiln floors, and test kilns have been in every day use for several years and have proven very satisfactory.

Our Brick Kilns are modern in every way, and have proven successful wherever built.

Our Radiation Heat Dryer has more radiating surface than any other dryer in use.

The Kilns and Dryers are very economical in construction and operation. We believe we have the most satisfactory Kiln and Dryer system to produce results on the market.

Wilson Kiln & Dryer Co.
West End Trust Building
Philadelphia, Pa.

PAUL FUCHS

Manager of the Excelsior Granite Brick Co. -:- Specialist for the Sand-Lime Brick Industry

Inventor of a New Process for Making "GRANITE BRICK"

My system enables the manufacturer to turn out a sand-lime brick of a compression strength of 9,000 pounds per square inch from proper raw materials. Send in a one-pound fair average sample of your sand and a one-pound sample of your lime for examination.

Porcelain Enamel for Clay Brick

Forward, express charges prepaid, ten brick for testing purposes.

Special Enamel for Sand-Lime Brick

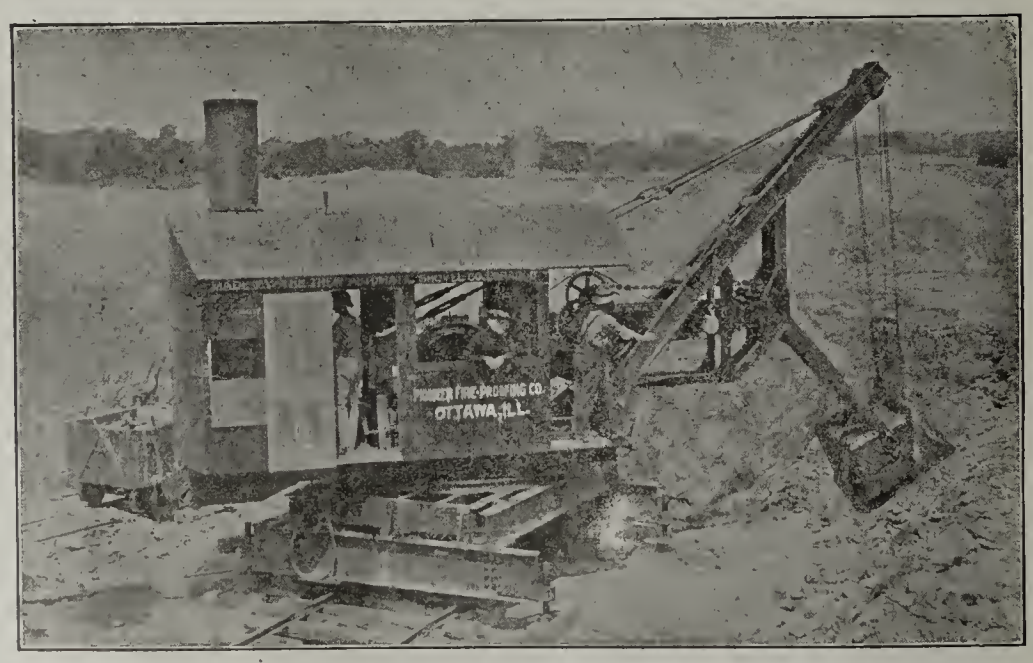
Send in as many brick as colors wanted and specify colors desired.

611 CARMEN AVE. **Chicago, U.S.A.**

HANDLE YOUR CLAY WITH ONE MAN AND

The Thew Steam Shovels

Made in Four Sizes. Mounted on Car Wheels or Traction Wheels.



Type No. 2 Shovel—Pioneer Fireproofing Co., Ottawa, Ill.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adjusted to cut to any desired level.

: : Only One Operator Required.
Wire Cables used instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickyards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

Write us for Catalogues and Information.

THE THEW AUTOMATIC SHOVEL CO.

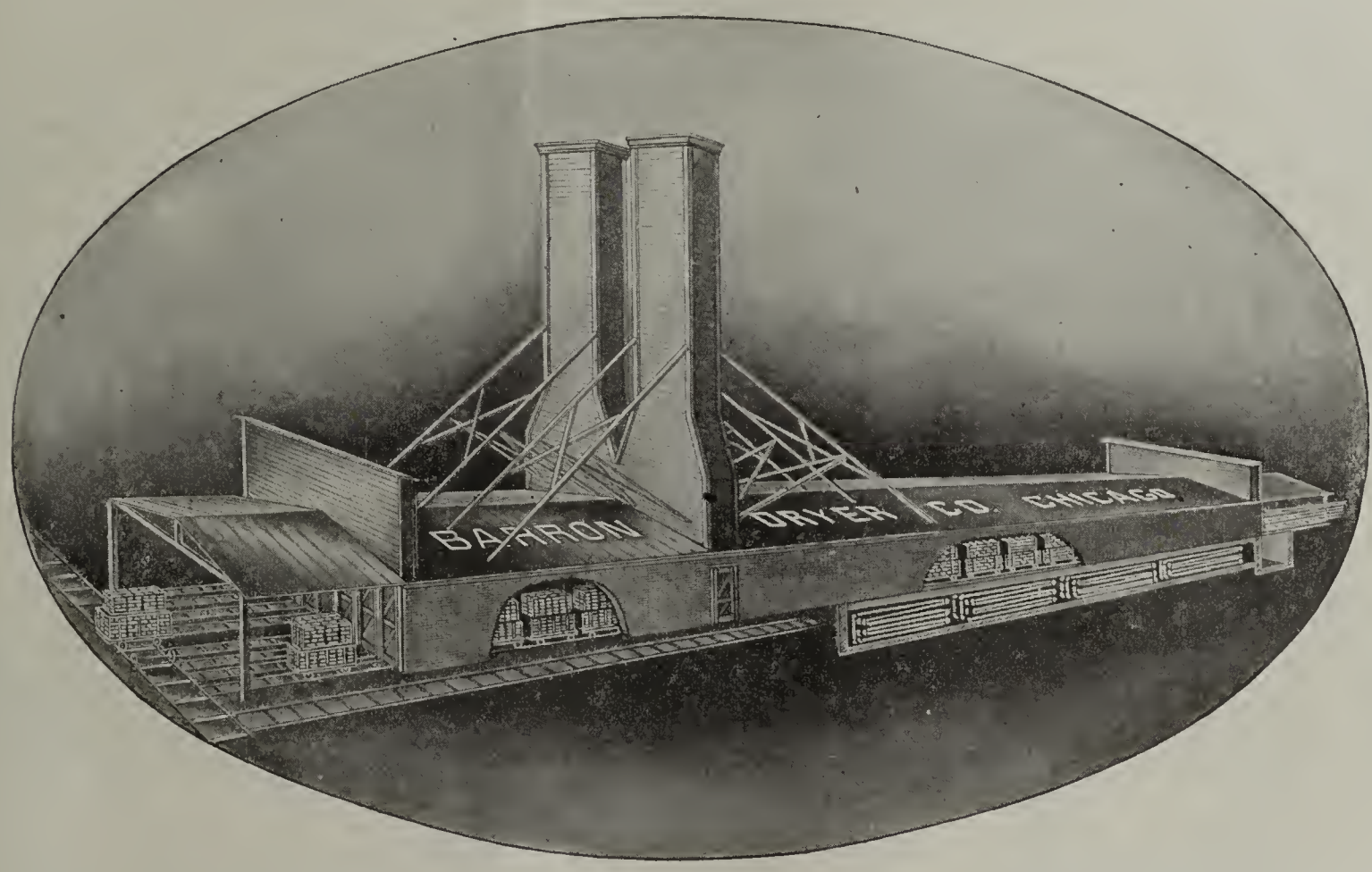
LORAIN, OHIO

BARRON DRYER COMPANY

Established 1879

MANUFACTURERS, PATENTEES and BUILDERS of the

CHICAGO IRON CLAD DRYERS
BARRON'S TENDER CLAY DRYERS



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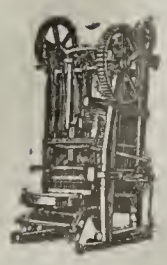
CASTINGS, FORGINGS, PIPE, VALVES, FITTINGS
RAILS, SPLICES, SPIKE, STRUCTURAL MATERIAL

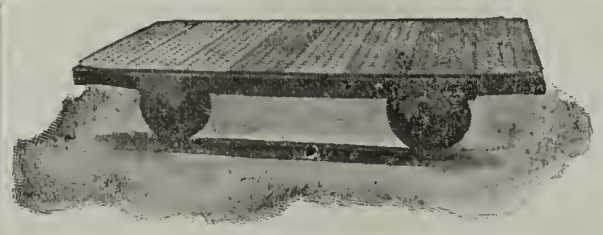
OFFICE AND SHOPS **18 SLOAN STREET** ON C. & N. W. RY. **CHICAGO**



THE "MARTIN" CLAY-WORKING MACHINERY

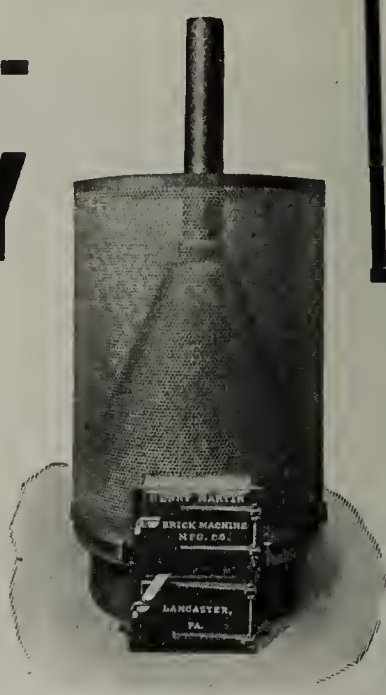
IS KNOWN THE WORLD OVER FOR

ITS SIMPLICITY DURABILITY AND COMPLETE SATISFACTION THROUGHOUT



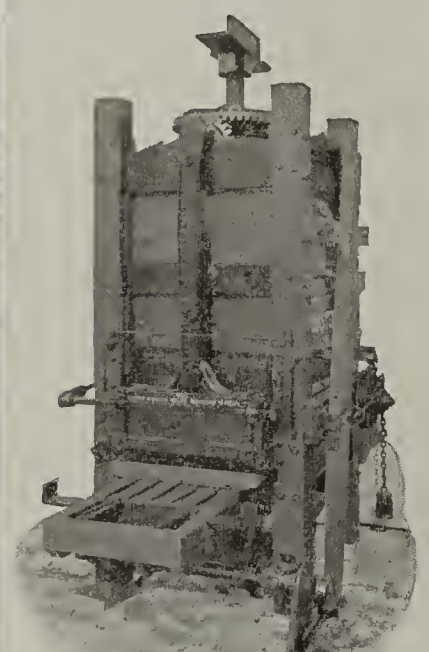
DRYER CARS

TRUCKS



MODEL SAND DRYER

WE GUARANTEE OUR MACHINERY



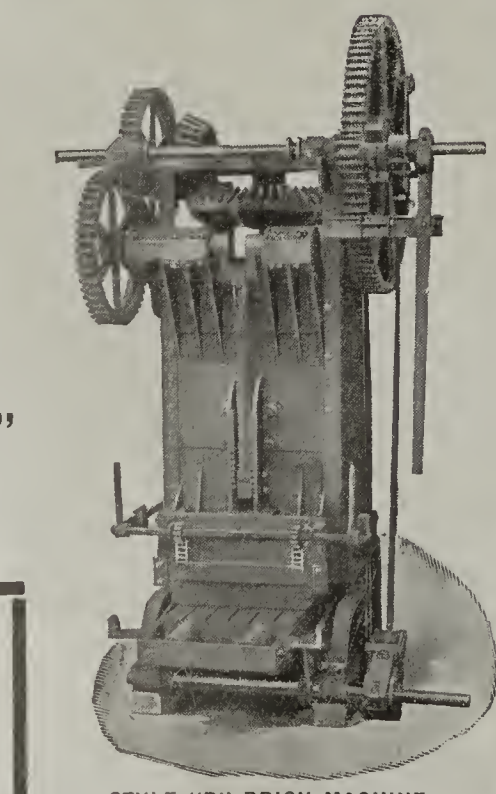
HORSE POWER MACHINE

YARD SUPPLIES

OF ALL KINDS BUILT RIGHT

TRUCKS

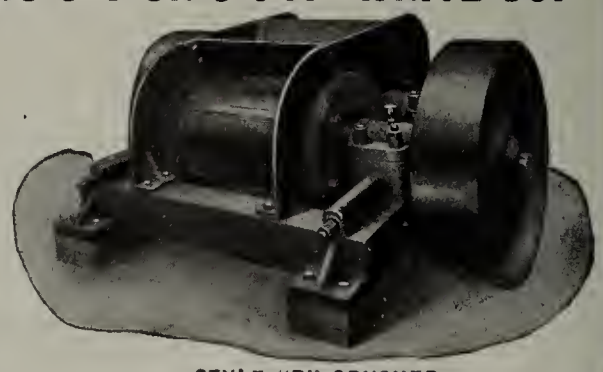
BRICK MOULDS THAT ARE BUILT FOR HARD USAGE IS THE "MARTIN." TRY A SET



STYLE "P" BRICK MACHINE

WE BUILD DRY OR WET PANS 5-7 OR 9-FT. WRITE US.

"WE FURNISH EVERYTHING THE BRICK-MAKER NEEDS"



STYLE "P" CRUSHER

MARTIN

CLAY-WORKING EHGINEERS & MACHINERY EXPERTS

LANCASTER, PENNA., U. S. A.

THE "MARTIN" STEAM BRICK "DRYING SYSTEM"

PATENTED February, 22d, 1898, No. 599509
October 10, 1905. No. 95520
November 14, 1905, No. 804489
May 26, 1908. No. 888831

This Dryer, and the design in arranging it, are under the protection of the United States Government by virtue of patents granted. Patents have also been taken out in all the principal foreign countries. We are the sole owners and control these important patents and have authorized NO ONE to manufacture or sell the "MARTIN"

RACK PIPE STEAM BRICK DRYERS

☞ YOUR BRICK DRY OVER NIGHT ☜

☞ LABOR SAVING THROUGHOUT ☜

ADAPTED FOR SOFT-MUD OR STIFF-MUD BRICK

SUPERIOR IN EVERY RESPECT TO ANY OTHER SYSTEM—Labor Saving Throughout. Dispenses with Truckers and car Pushers. Pallets Automatically Return to Brick Machine. Quick to install and low in price, and takes up very little Yard room.

The sale and construction of the "Martin" Rack Pipe Steam Brick Dryer is under the direct supervision of the Factory Office at Lancaster, Pa.

FOR FURTHER INFORMATION, ADDRESS

THE HENRY MARTIN BRICK MACHINE MFG. CO., Inc.

LANCASTER, PA., U. S. A.

Silicate Brick Made by the "Division Method" Patented

THE PHILADELPHIA OPERA HOUSE

Built by Oscar Hammerstein and called the finest Opera House in the World. This beautiful building is faced with over 500,000 of our WHIE SILICATE BRICK, made under our patented process. These bricks were also used to line the wall at back of stage and also for the stairways.

The building seats 4,100 people and measures 240 feet on Broad Street and 160 feet on Poplar Street.

How would you like to make Brick suitable for Facing Buildings like this and do it cheaper than common brick can be made in any other way out of sand and lime?

We challenge any one to make as good a brick as we do by our process, and will allow him twice our cost.

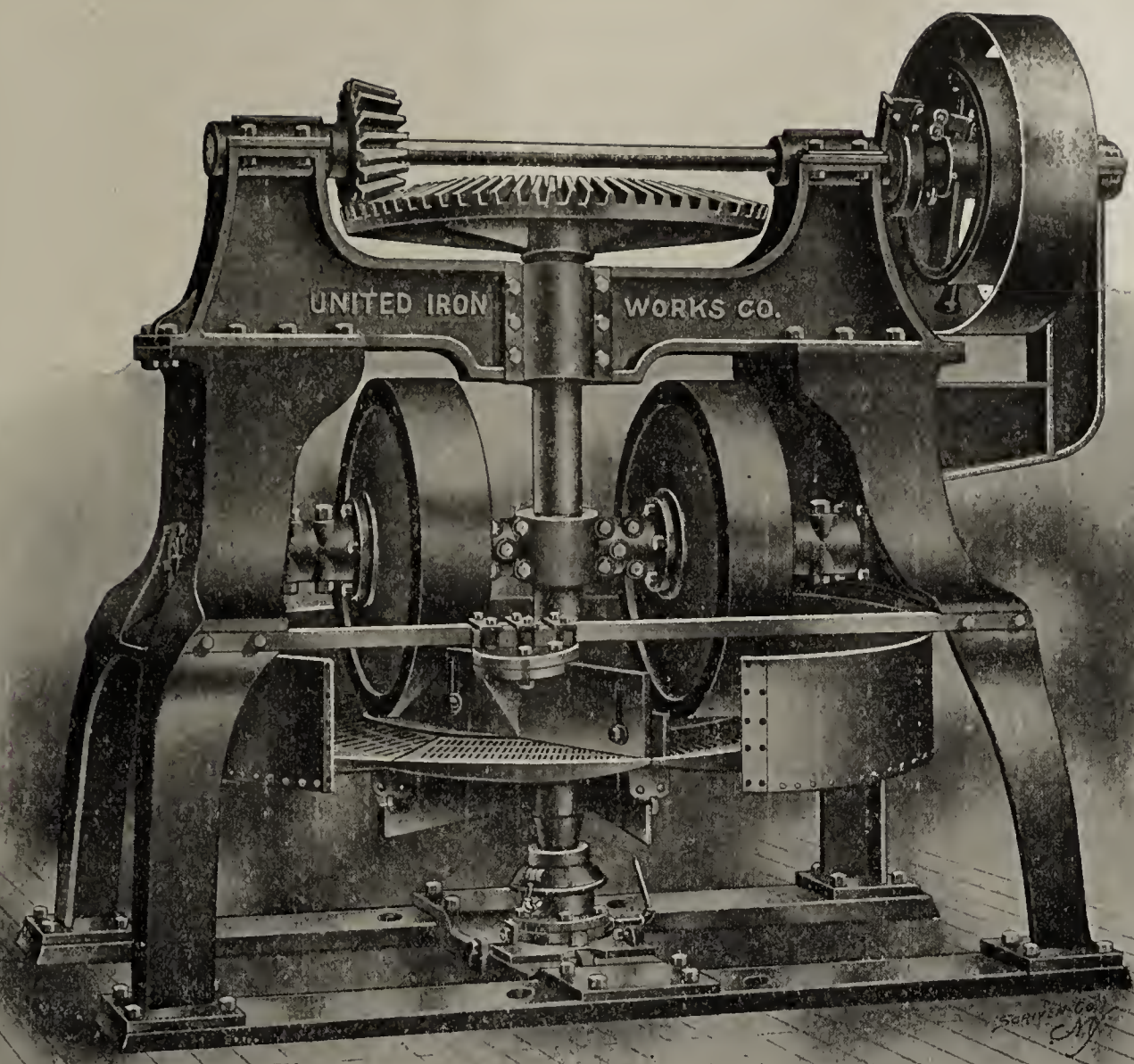
The factory we built last year at Washington, D. C., is pronounced the most compact and cleanest known, and the product the finest brick produced.

WE CAN DO AS WELL FOR YOU. ASK US ABOUT IT AND LET US SHOW YOU

International Sand-Lime Brick & Machinery Company

Engineers and Contractors for Silicate Brick Factories

90 WEST STREET, NEW YORK, N. Y.



Here's What One of the Largest Cement Companies in the United States Says About our "Pittsburg" Dry Pan:

"Answering yours of the 19th instant; We are pleased to state that the dry pan which we purchased of you about a year ago has given entire satisfaction. We consider it one of the best, if not the best, dry pan manufactured and shall, indeed, be pleased to recommend it to prospective purchasers of such machinery.

Yours truly,

WESTERN STATES PORTLAND CEMENT CO."

And they Backed up their statement by ordering recently THREE MORE Pans from us

UNITED IRON WORKS COMPANY

General Offices: SPRINGFIELD, MO.

SPRINGFIELD, MO.; AURORA, MO.; IOLA, KAS.; PITTSBURG, KAS.
CHERRYVALE, KAS.; KANSAS CITY, MO.

No. 217-E
Electric Side Dump Car.

No. 145
Ball Bearing Turntable. Made in sizes from 4 ft. to 11 ft. in diameter.

No. 161-[illegible]
Gable Bottom Dump Car [illegible] trip and [illegible]e

CARS FOR BRICK YARDS, CEMENT WORKS, CONCRETE BLOCK MANUFACTURERS, STONE QUARRIES, ETC.

NO. 217-S
Either Side Rocker Dump Car.

TURNTABLES, TRANSFER CARS, DRYER CARS, TRACK, SWITCHES, BRICK PALLETS.

NO. 128
Heavy Double Deck Car
Patent Malleable Iron Uprights.

NO. 142
Transfer Car.

NO. 129
Double Deck Car.

NO. 277
Steel Mine and Quarry Car.

The Atlas Car and Mfg. Co.

CLEVELAND, OHIO

VOL. 35 No. 5

CLAY RECORD

A JOURNAL DEVOTED TO THE DISSEMINATION OF ALL MATTERS PERTAINING TO THE CLAY INDUSTRY

September 15, 1909

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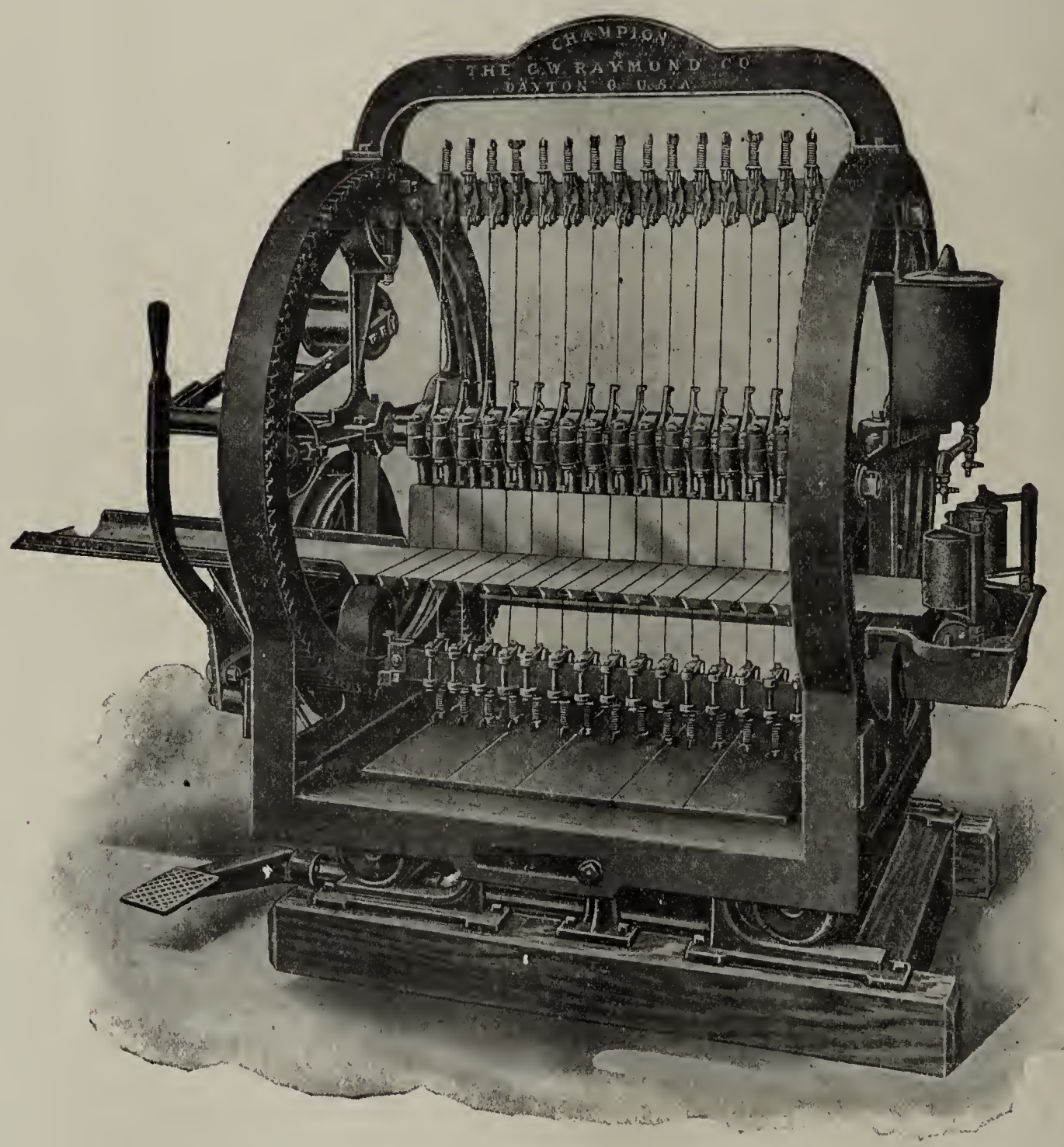
imperative demands from all sections of the country for a cutting table to accurately cut stiff mud face brick has brought out the Champion, the next upward step in the evolution of Rotary Cutters. It is semi-automatic and all of the desired qualities are there, we find nothing to improve about it. It has won its way by sheer merit. It has the good will of every face brick maker who uses it, and many more who have but seen it. It is chock full of perfection. We haven't room to tell you all about it here, but write now.

THE C. W. RAYMOND COMPANY,
DAYTON, OHIO, U. S. A.



The Andrus Brick Press Makes Brick Every Day

Been doing it 20 years.

Strong Simple and Capable.

24 in operation in St. Louis District.

INVESTIGATE

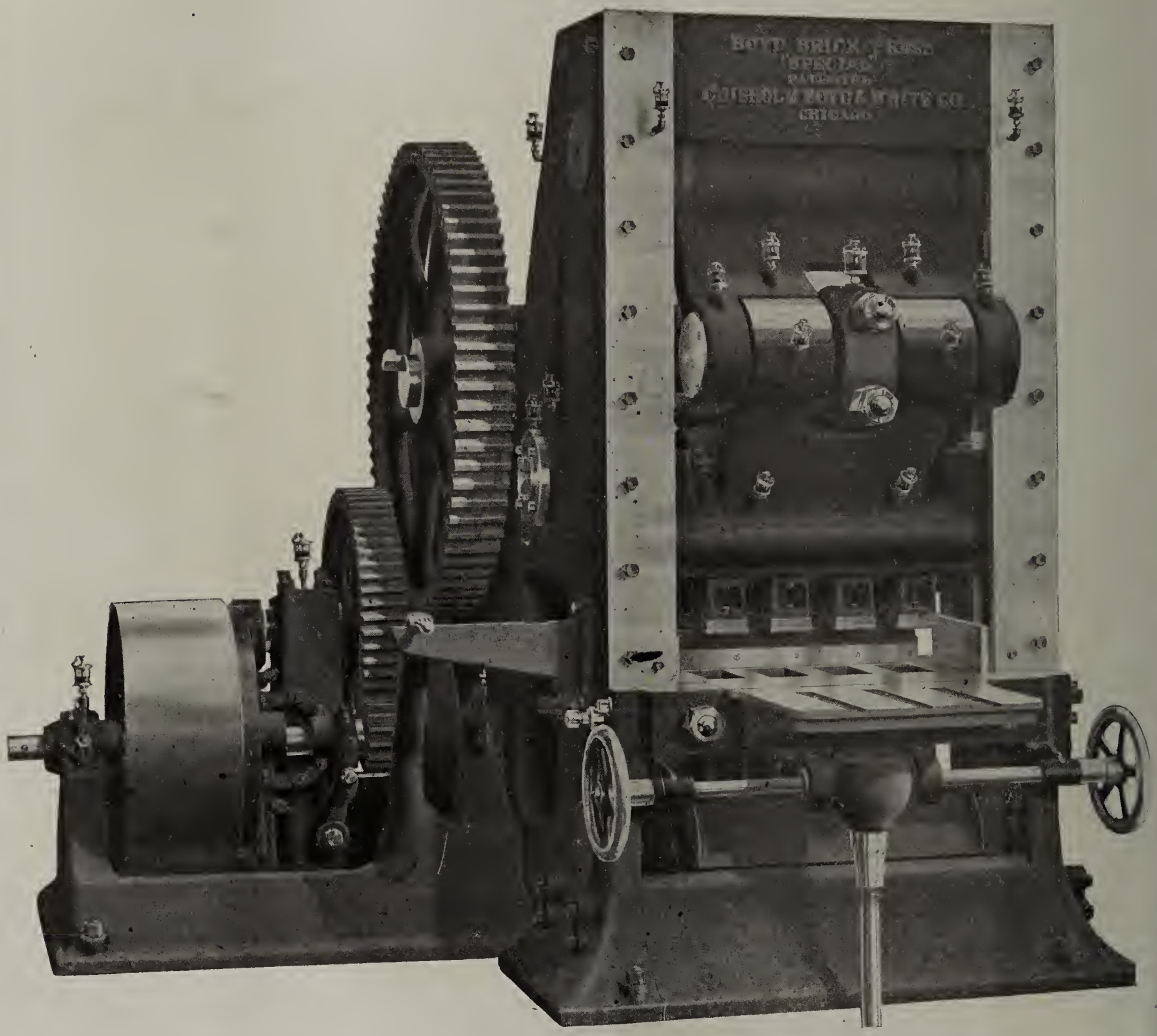
Scott Manufacturing Co.

1815 THIRD NATIONAL BANK BUILDING

ST. LOUIS ~ ~ MISSOURI

THE BOYD BRICK PRESS

Built in Two, Four and Six-Mold Sizes



FOUR-MOLD SPECIAL

BRICK PLANTS designed and complete machinery equipment furnished. More Boyd Presses in use than all other Press Brick Machines combined.

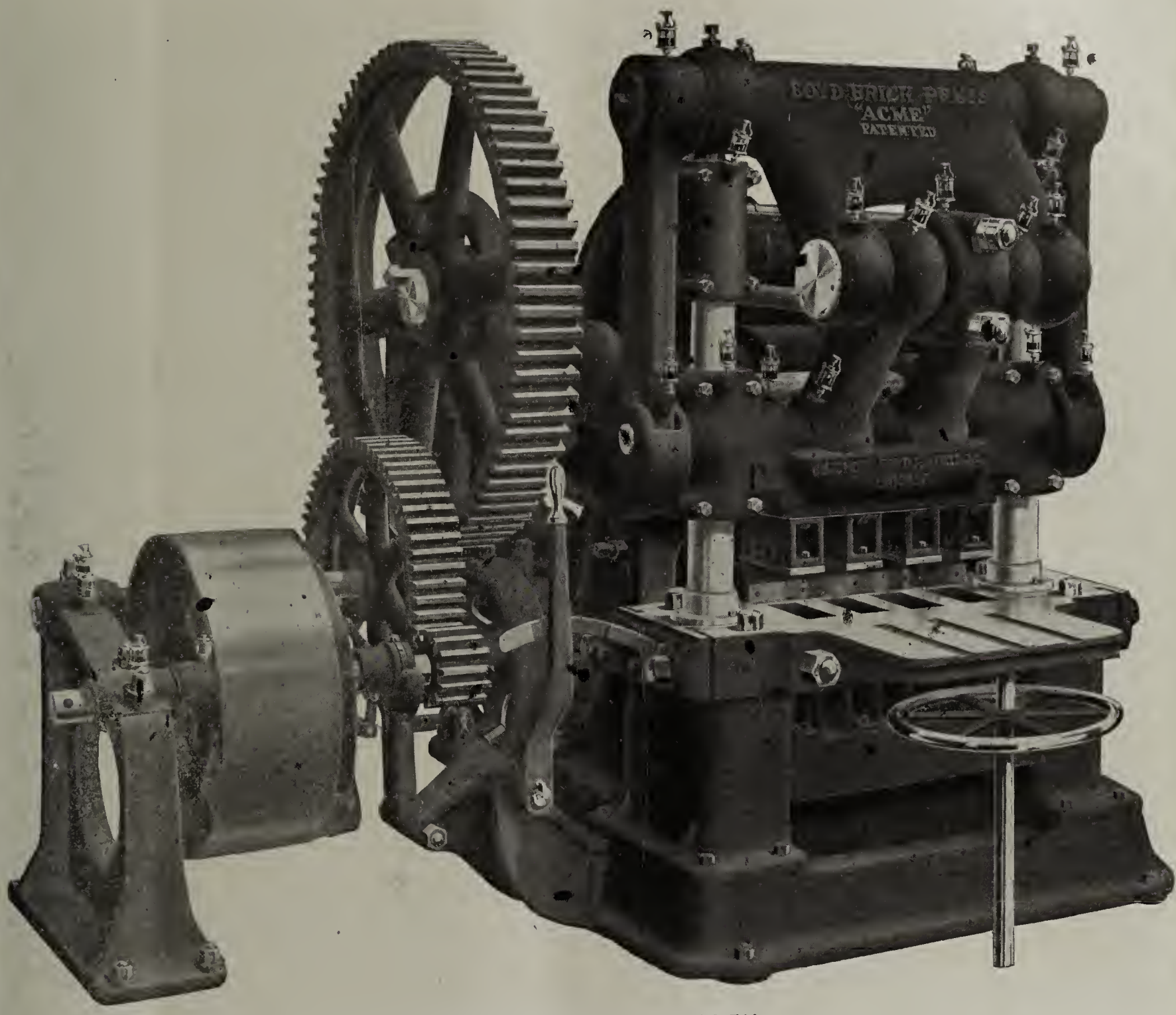
The Boyd Press has great strength and endurance, great pressure and long dwell. Boyd Presses built 20 years ago are still in use and doing good work. Brick Presses that last are the cheapest in the end.

Chisholm, Boyd & White Company

Office and Works: 57th and Wallace Streets, CHICAGO, ILL.

THE BOYD BRICK PRESS

Built in Two and Four-Mold Sizes



FOUR-MOLD "ACME"

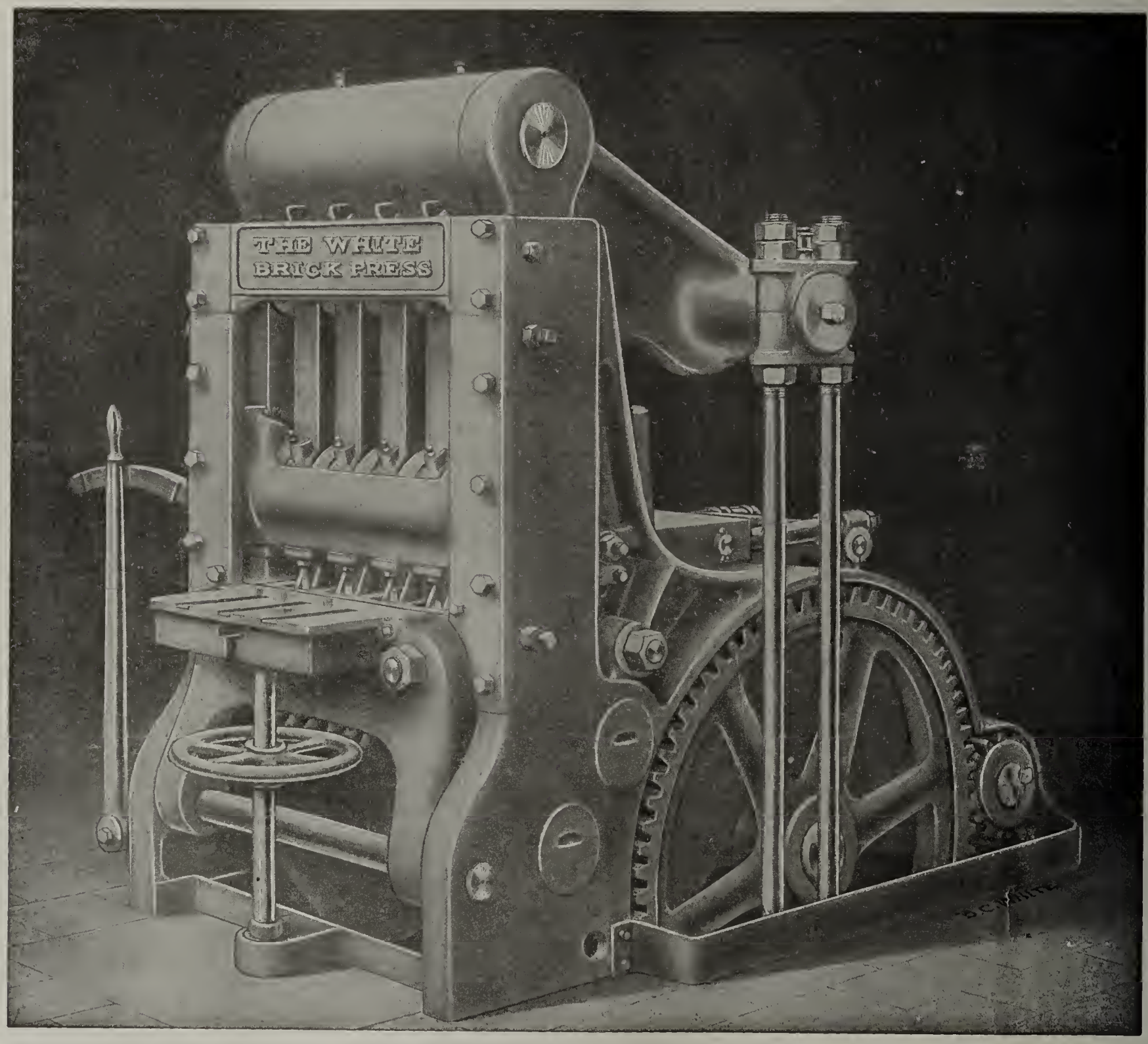
Detailed perfection, strength, endurance and quality of product have made the Boyd, the Brick Press by which all others are judged.

Write for catalogue No. 20 containing suggestions concerning the equipment of brick plants with complete plans.

CHISHOLM, BOYD & WHITE CO.

Office and Works: 57th and WALLACE STREETS CHICAGO, ILLINOIS

ALWAYS ON THE JOB
THE WHITE BRICK PRESS



When You Learn of a Breakdown on the Yard, You may be sure it is NOT the PRESS, if it is a WHITE

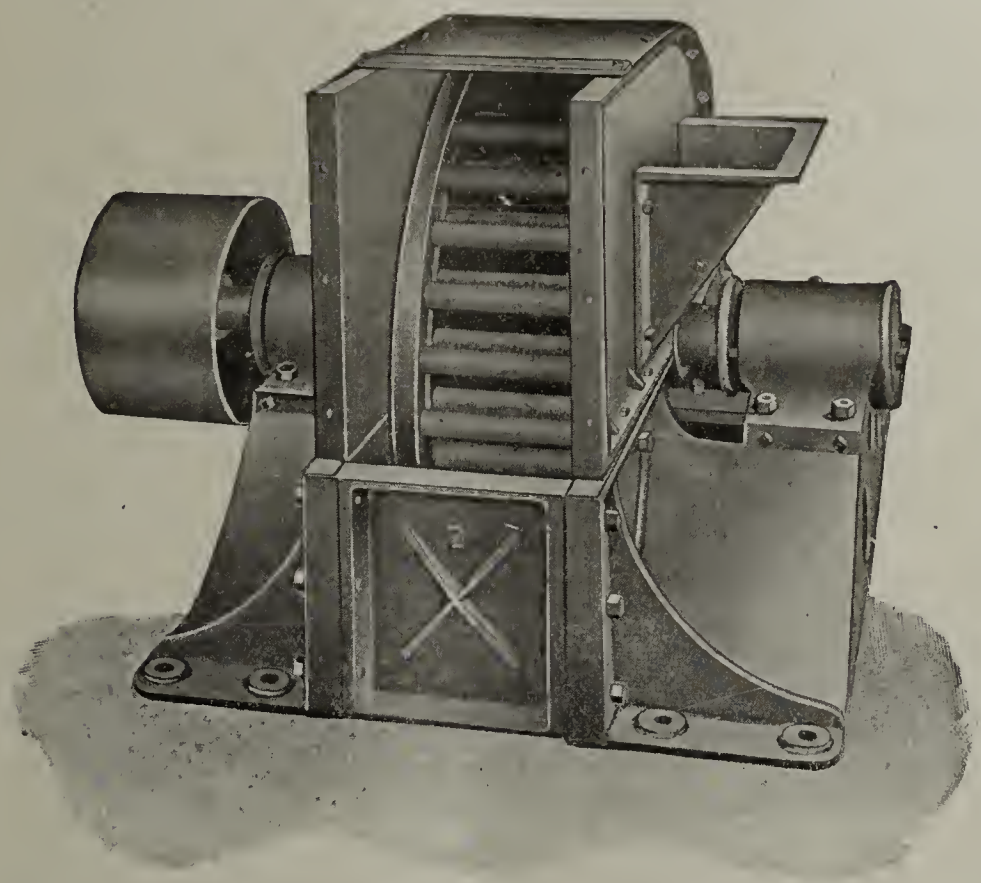
SEND FOR CATALOGUE

CHICAGO BRICK MACHINERY CO.

1308 GREAT NORTHERN BUILDING, CHICAGO

The Fernholtz Brick Machinery Company

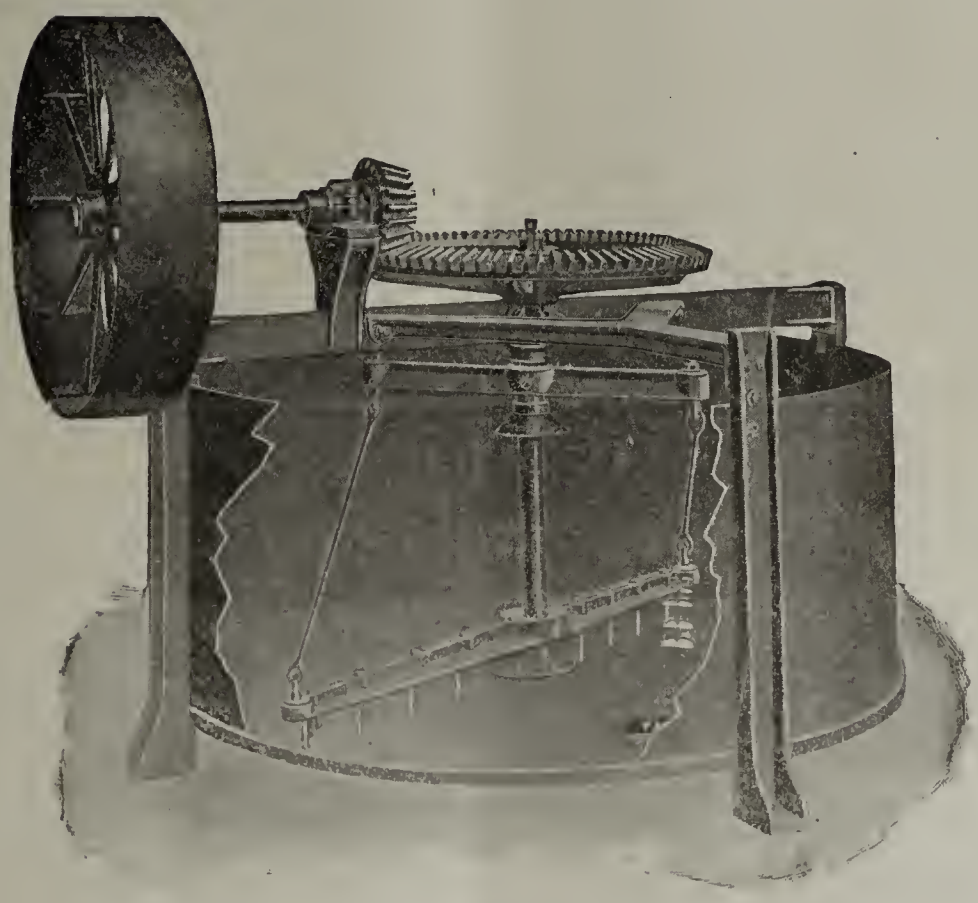
Sizes
29"
36"
42"
50"



Fitted with Adjustable Pins

THE FERNHOLTZ CLAY PULVERIZER

If you want to make a FACE BRICK you need it.



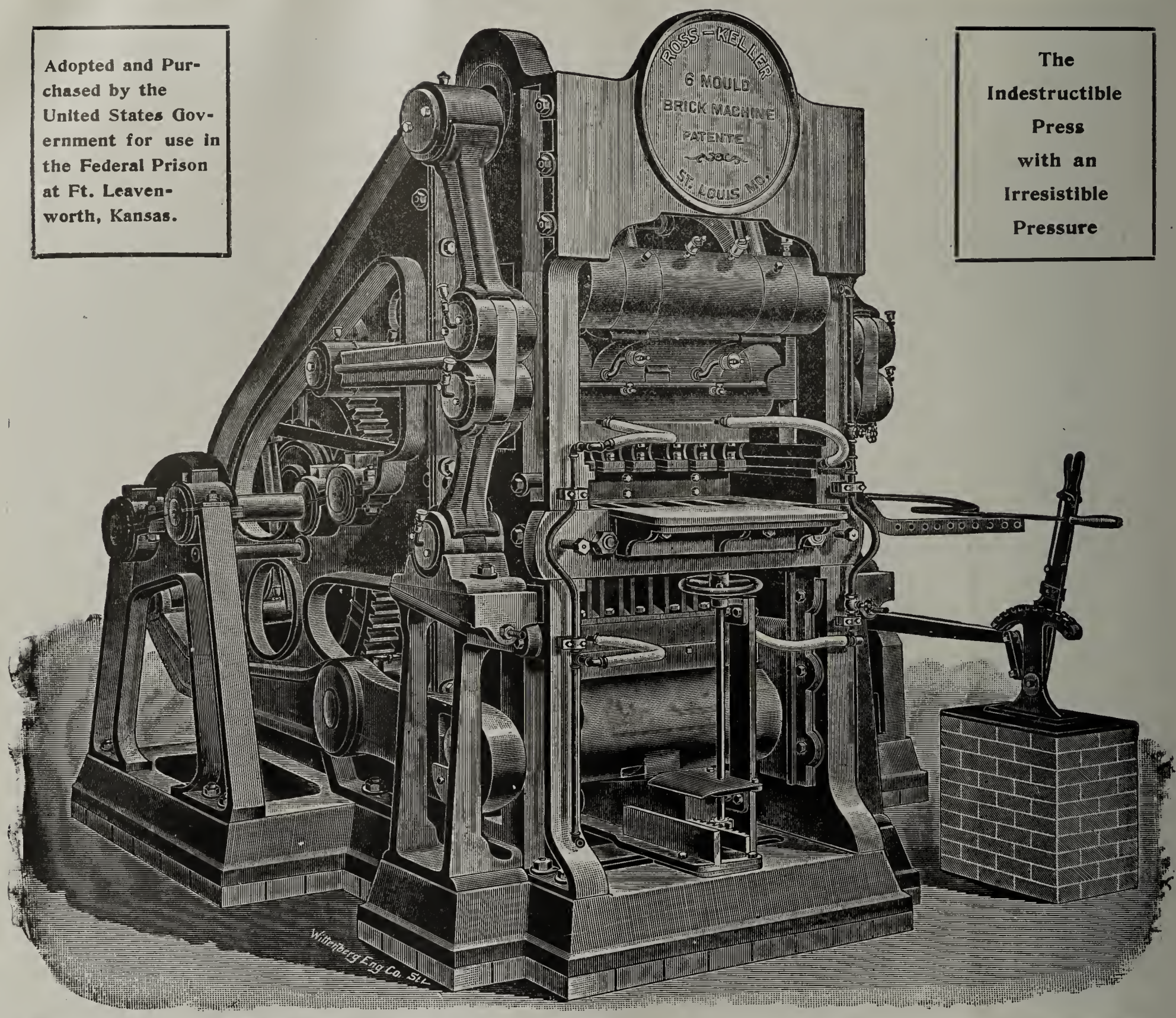
Makes Your Brick Uniform

A GOOD MIXER IS ALWAY. APPRECIATED

The Fernholtz Brick Machinery Company,
Boyle Ave. and Old Manchester Road, St. Louis, Mo.

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.

The Indestructible Press with an Irresistible Pressure



WE BUILD

Sand-Lime Brick Plants, Shale and Clay Brick Plants

ARE ALSO SOLE MANUFACTURERS OF THE

Ross-Keller Triple Pressure Brick Press

The strongest and most efficient Brick Machine made, and the only Press that gives three distinct pressures to the brick

ROSS-KELLER TRIPLE PRESSURE BRICK MACHINE CO.

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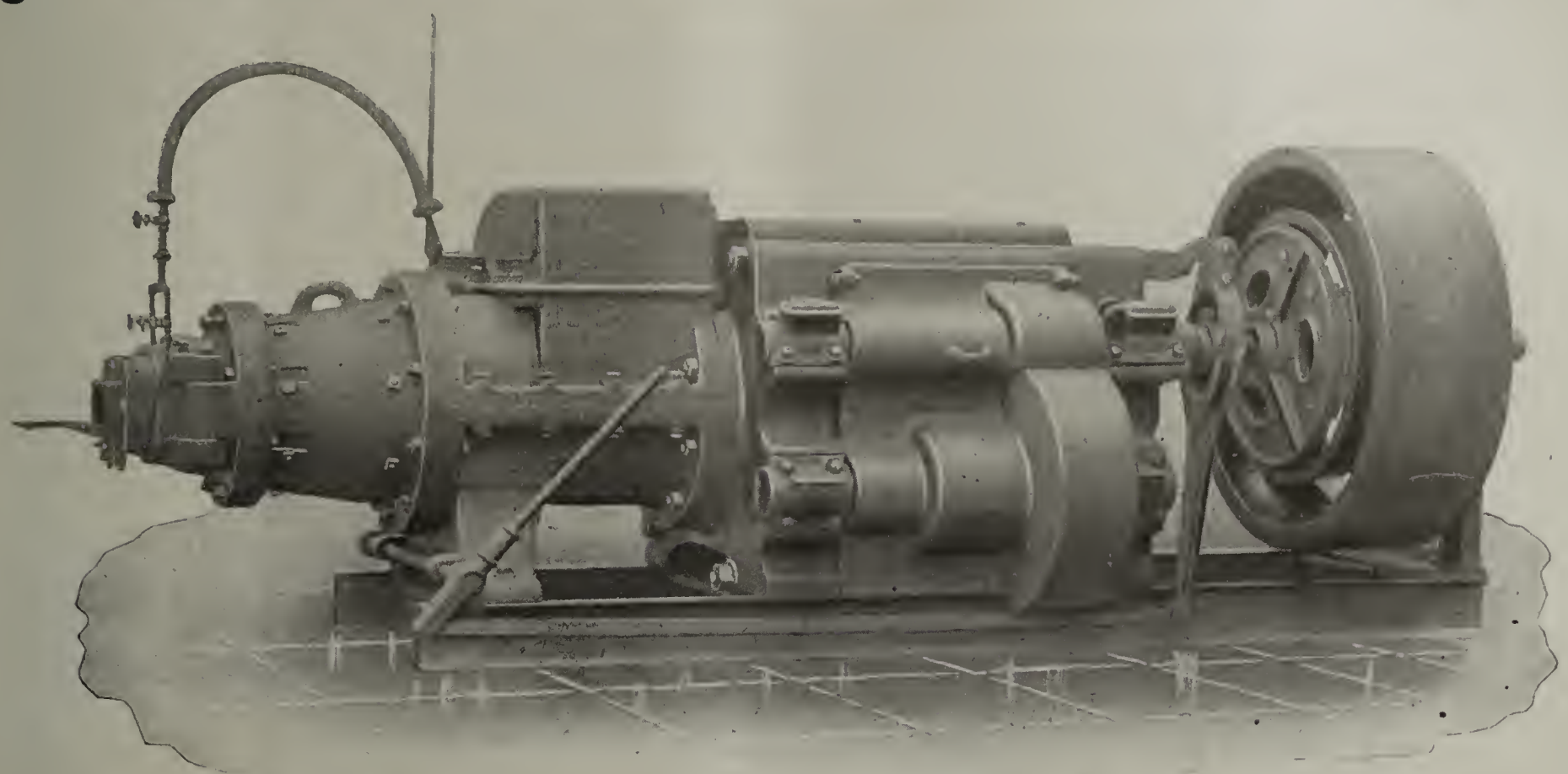
"Freese" Brick Machines



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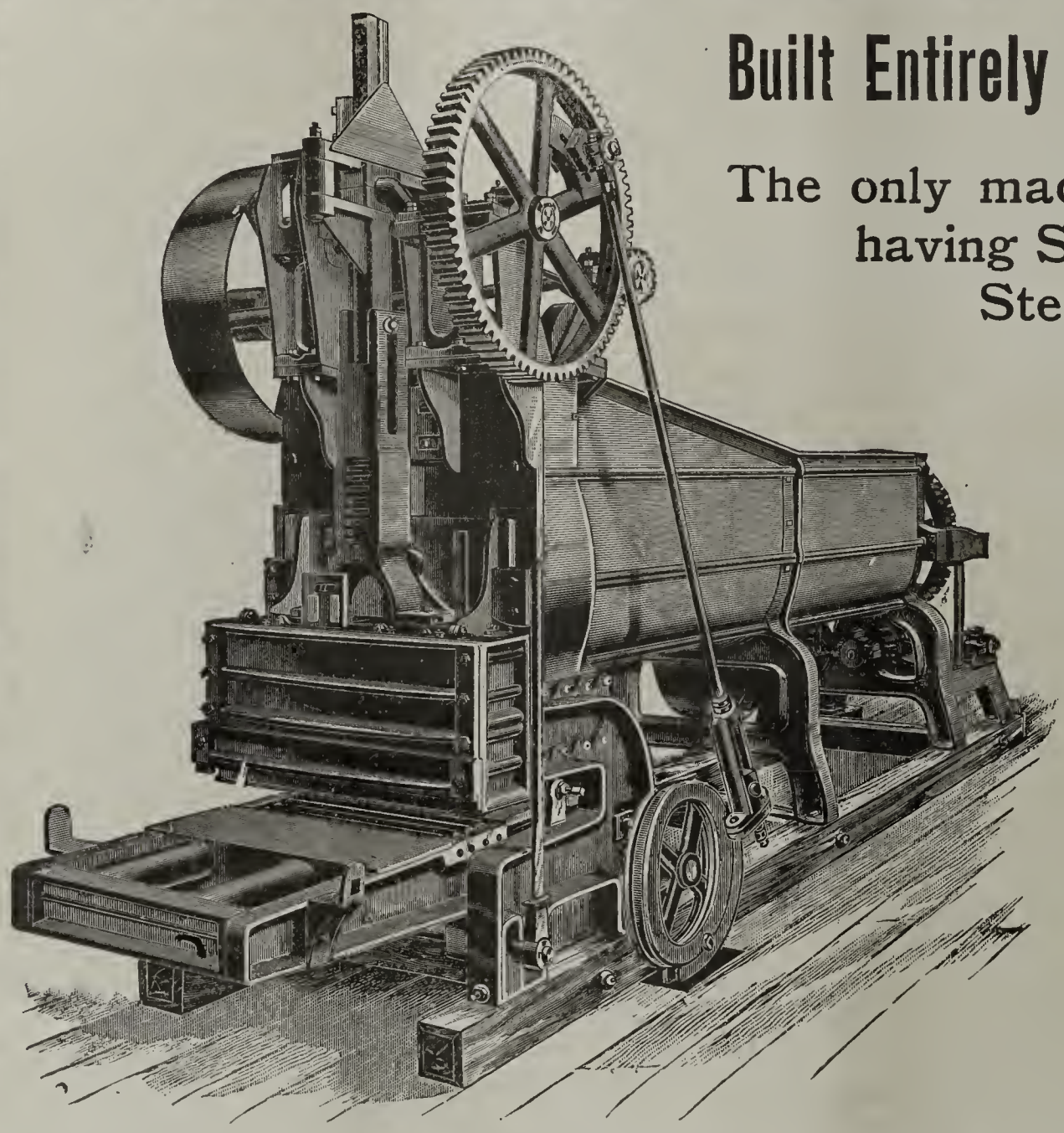

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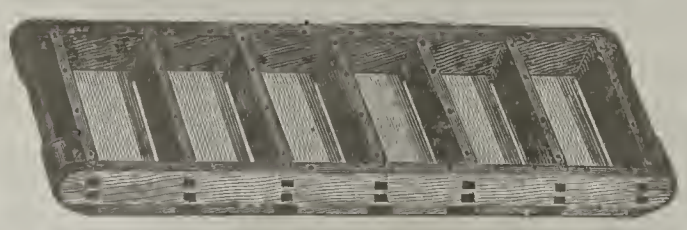

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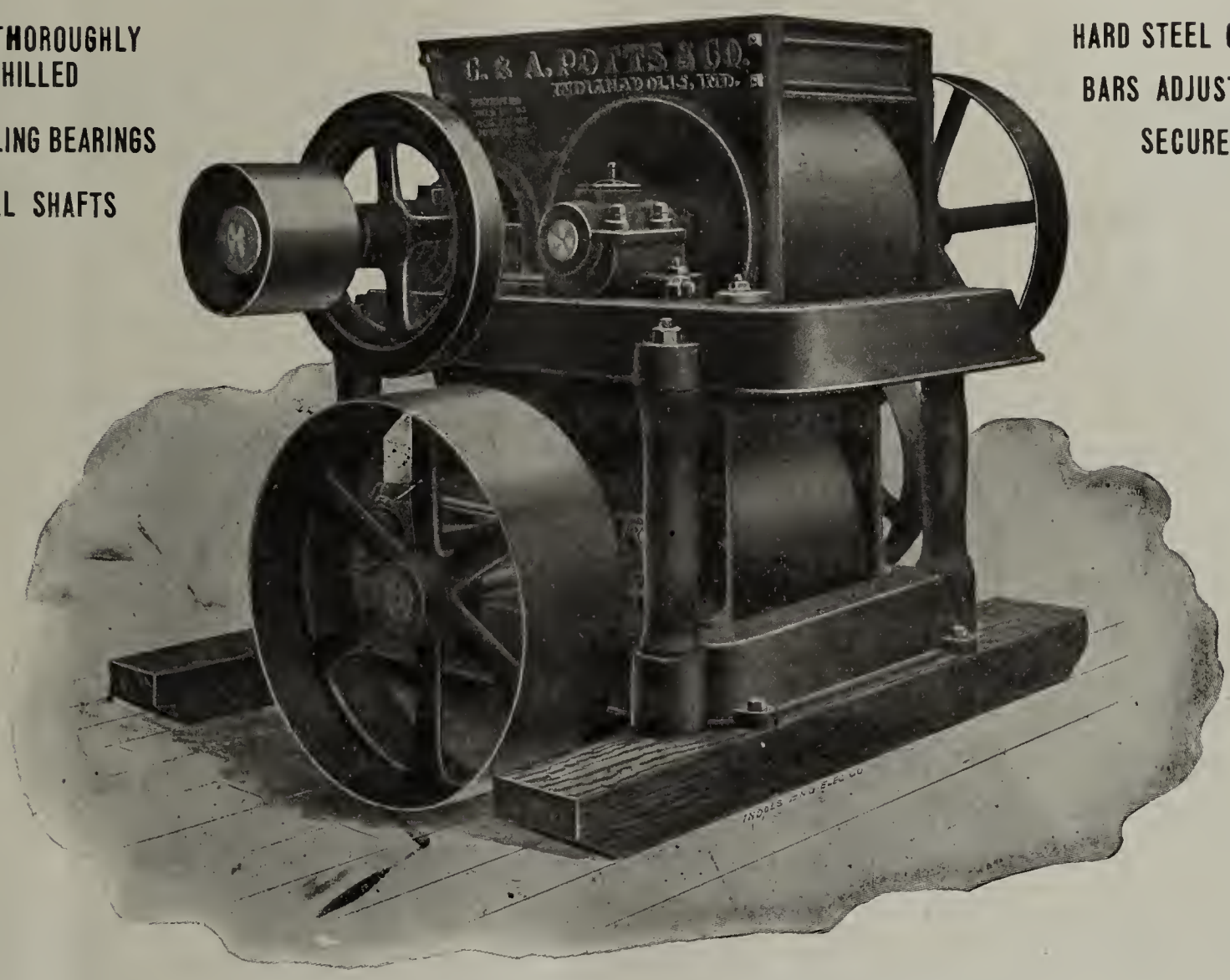

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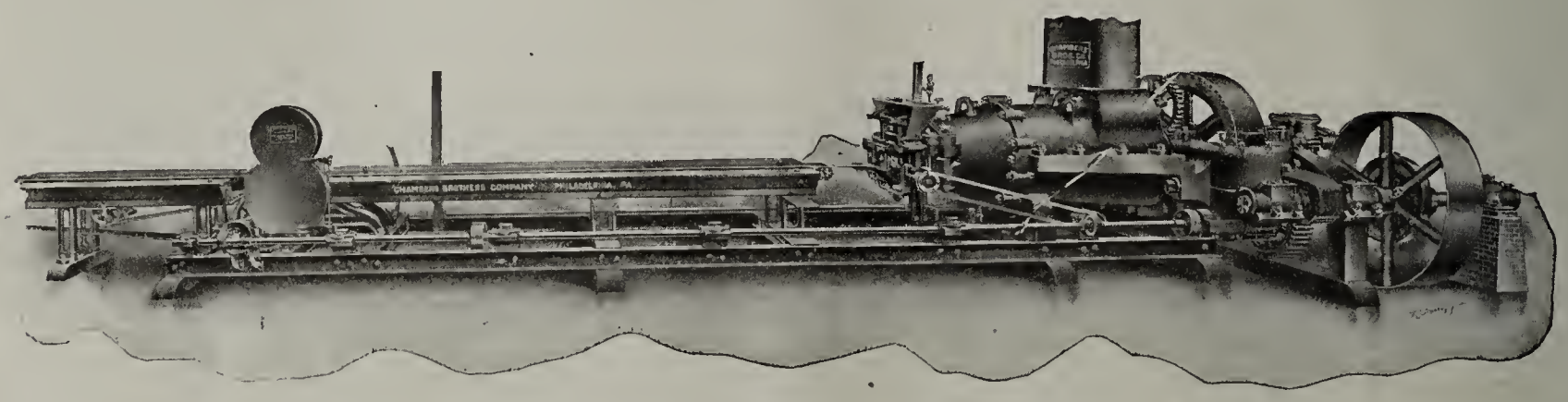

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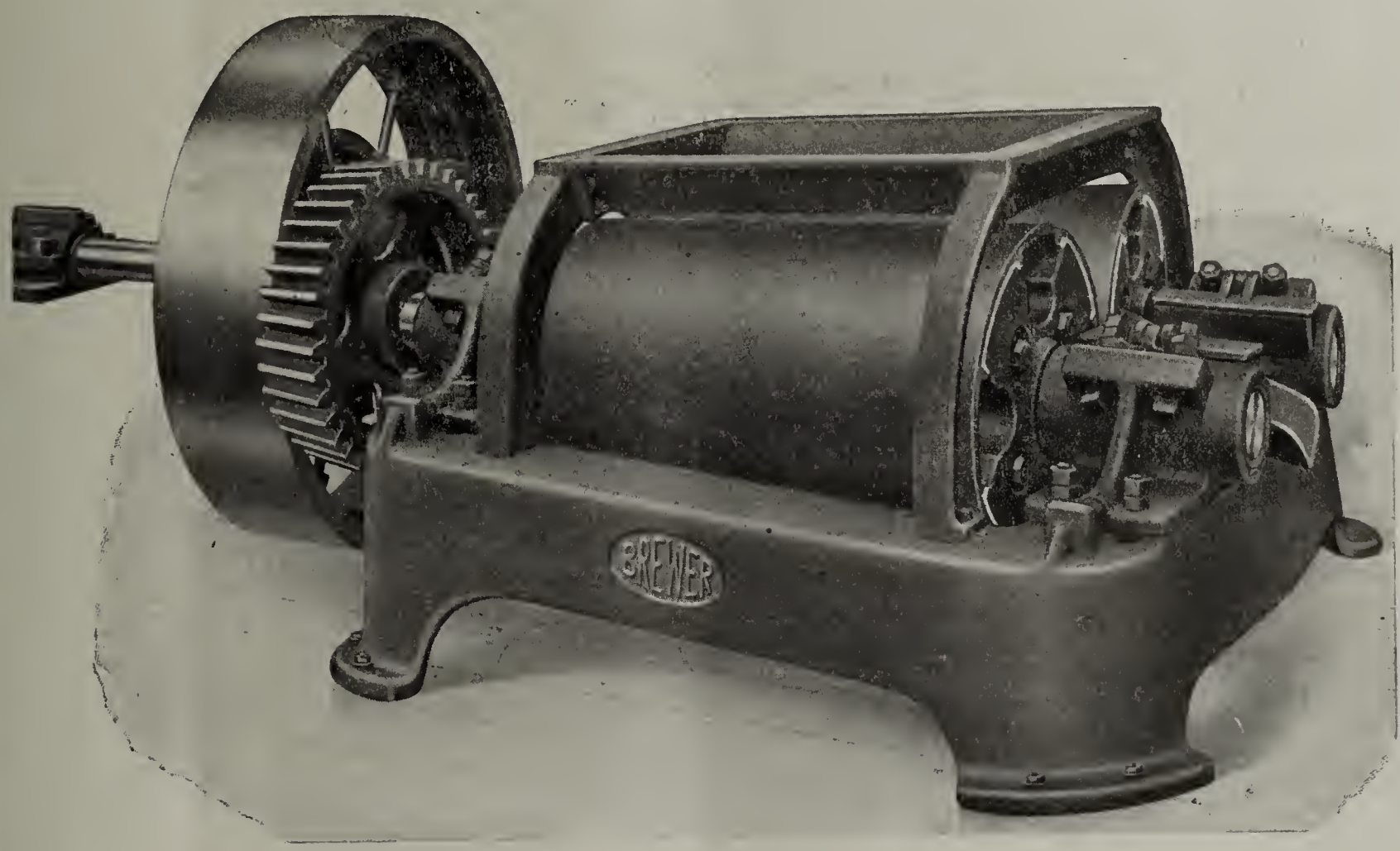

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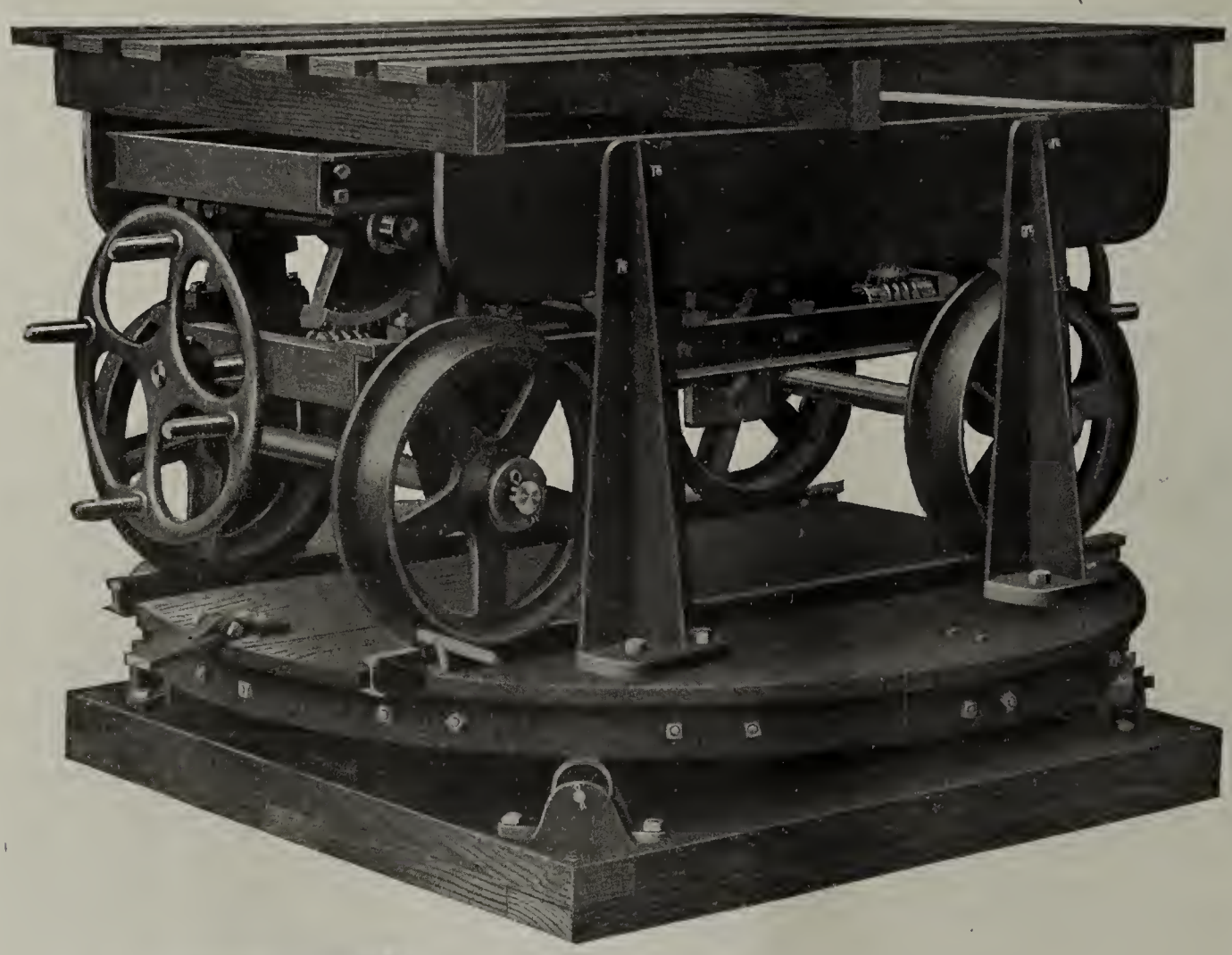

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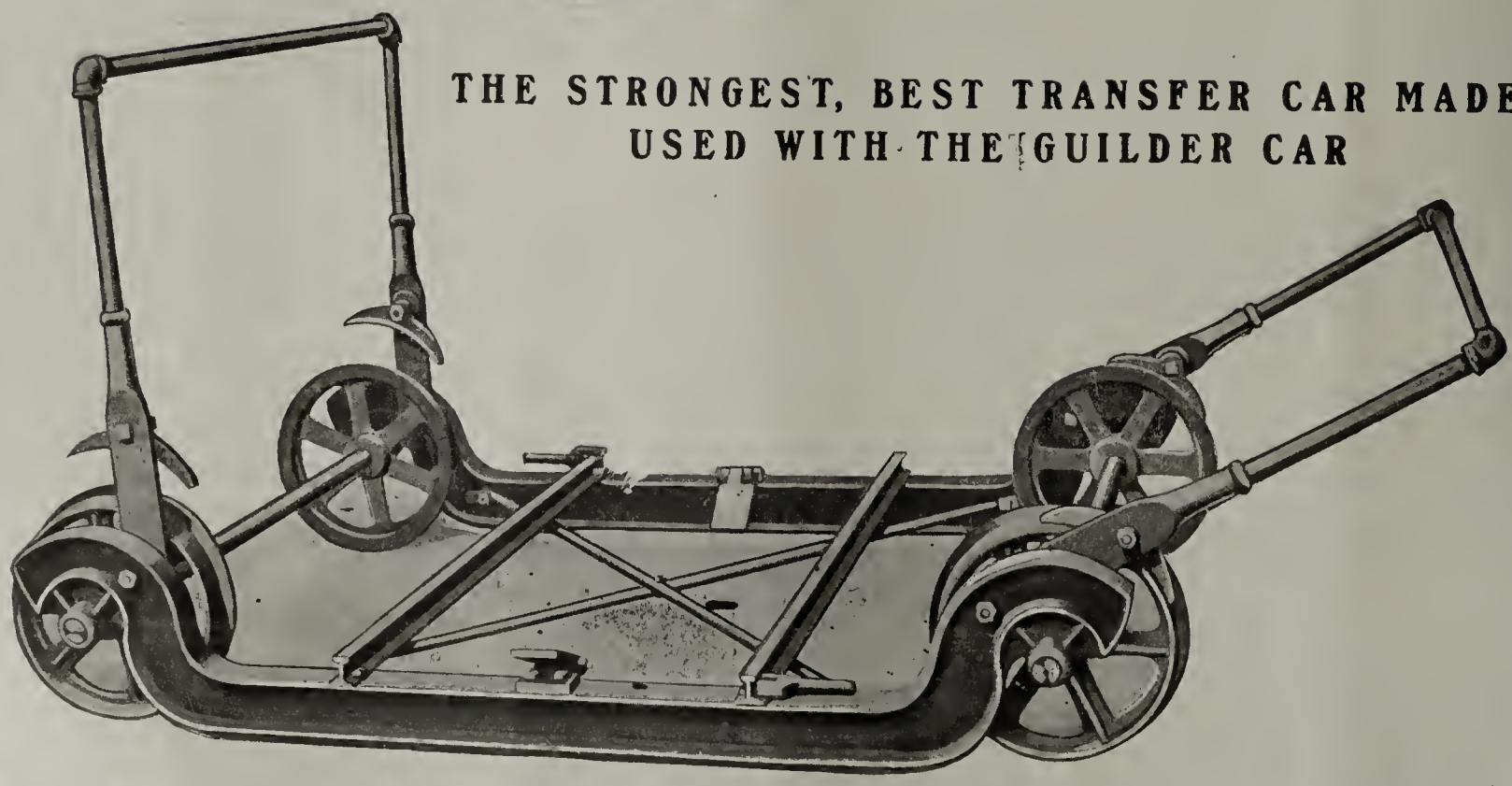

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CLAY RECORD

Entered as Second-Class Matter January 25, 1893, at the Post Office at Chicago Ill., under Act of March 3, 1879

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THE PREPARATION OF SURFACE CLAYS. *

By Permission of the Director, U. S. Geological Survey.

A. V. Bleininger, Pittsburg, Pa.

Gentlemen of the Wisconsin Clay Manufacturers' Association:

In order to obtain a clear understanding of the behavior of our common clays we must take the pains to determine what they are made of, for it is obvious that we are not dealing with a simple homogeneous substance, but with one extremely complex in its structure.

We can obtain a pretty clear idea of the mineral structure of clay by making up some of it with water into a thin slip and pouring the latter through a set of sieves, starting with the coarser and finishing with the finest ones. Each sieve is then washed with water so that only a certain size of grain is retained. If we desire it we could weigh the amount of clay taken in the beginning as well as the residues left on, for instance, the 10, 20, 40, 60, 80, 100, 120, 150 and 200 mesh sieves. In this manner a pretty good idea could be obtained of the size of grains making up the material.

As to the separate constituents making up the clay, probably the first thing we observe on the coarser sieves would be hard, colorless grains which we can at once identify as quartz, known to all of us as pure white sand.

The mineral quartz is one of the constituents invariably present, and it plays an important part in the make-up of our clays. It occurs in all sizes from the coarsest to the very finest grains. This mineral naturally possesses no plasticity whatever. Its presence, therefore, in the clay tends to reduce the plastic quality of the latter, and hence it decreases the shrinkage of the clay in drying. When heated, quartz will be found to resist very high temperatures, which are far above the heat employed in the burning of our red-burning surface clays. At the same time, however, quartz possesses the peculiar property of expanding on being heated. Inversely, when hot quartz is cooled it has a tendency to shrink again. This change in volume must not be confused with the changes occurring in heating and cooling any body. These volume changes are far greater than those due to expansion and contraction. Chemists tell us that quartz when being heated to a certain temperature changes its entire character and becomes a new mineral called "tridymite." We have frequently the opportunity of observing this increase in volume when we endeavor to burn clays very high in quartz in our kilns. We find thus that bricks made from such materials appear to show no shrinkage, but in fact increase in volume. From this we observe, therefore, that the quartz when heated in a clay not only decreases the drying shrinkage of the latter, but tends to decrease the burning shrinkage as well. It is evident that in pugging a clay very high in sand much less water will be required than in working a more plastic clay. Likewise, a sandier clay may be dried much more rapidly than one not so high in sand. As regards the porosity of the clay mixed with sand and burnt to a good hardness, we observe that this also is greater than that of the clay containing no sand burned to the same temperature.

It is easy to see, therefore, that if we have too much sand in our clay we experience trouble in drying, owing to the weakness of the mixture, the clay not being sufficient in amount to withstand the tensile strain caused by drying and in consequence the product cracks and checks. Furthermore, in burning very sandy clays, since they do not shrink but expand, they result in a weak, punky structure which becomes evident to the eye by the fine hair-cracks appearing on the surface, and by the lack of ring. The question of the fineness of the sand is a very important one. We find that very fine sand behaves altogether different from coarse sand. To illustrate: If we add a small amount of coarser sand, for instance, a grade passing 10-mesh sieve, to a fine grained, red-burning clay, we shall find that the material stands up better in the kiln than the clay alone. It does not soften so easily in the heat, and therefore the loss due to kiln marking and deformation is reduced. However on adding to the same clay a small amount of very fine sand the clay will not stand up as well in the kiln as it would without the addition of sand. This difference is due to the fact that fine sand enters into chemical reaction with the clay, while the coarser one does not. Again, a certain amount, say 15 per cent., of fine sand added to a clay requires more water in pugging than 15 per cent. of coarser sand. Furthermore, the addition of fine sand to a clay does not shorten the time of drying as much as the coarser. Fine sand also causes a greater tendency to check and crack in the kiln than the coarser. For best results as regards drying, shrinking and burning, as well as final strength, the sand should not consist of one size of material, but should be made up of coarser as well as of finer grains. The coarser grains should predominate, so that, roughly speaking, we should have about 3 parts of the coarser

*Read at the 1909 Meeting of the Wisconsin Clay Manufacturers Association.

grain to one part of the finer, although this is subject to fluctuations according to the sizes of grain involved. Speaking more exactly, the volume of the finer sand grains should be equal to the volume of the pore space in the coarser sand.

This we can illustrate by filling a quart pail full of the coarser sand and striking off the excess by means of a straight edge. If we now pour water onto the sand from a measuring vessel, until the pail appears to be full, we shall learn just what the volume of the pore space is. For instance, if our pail holds 60 cubic inches of coarse sand and we succeed in pouring in 20 cubic inches of water, it is quite clear that the pore space is about 20 cubic inches. The sand mixtures, therefore, should consist of about 75 per cent. of coarse sand and 25 per cent of fine sand. A mixture of this kind if added to the clay in reasonable amounts depending upon the original richness of the clay, say 15 per cent., would thus decrease the drying shrinkage, reduce the time of drying, and any tendency to check and crack, would cause the brick to stand up better in the fire and would result in a denser and stronger brick. It would also cause the clay to burn to a cleaner color, provided the sand itself is free from impurities and there would be less tendency for the brick to white wash. Where the bricks are made by the stiff-mud process the time of burning would be considerably shortened, and bloating would be practically eliminated. If the sand used is too coarse, however, the bricks will invariably check and crack in the kiln, to say nothing of the rough appearance of the product. Many clays naturally contain enough of this sand properly proportioned to perform the functions already indicated. The question of improving heavy, plastic clays which dry difficultly by the addition of sand is an important matter, and more attention should be given to this matter. Because a sand bank happens to be close by is not a sufficient reason why this material should be employed. Many of the sands are so full of impurities, or are either so fine or coarse that they are unfit for the purpose for which they are intended. It would pay many brickmakers to clean their sand, rejecting that portion which is too coarse, as well as the excess of the fine matter.

In resuming our study of the sediments found on the sieves we observe among the fine grains of sand mineral particles which, on close inspection, appear to possess a kind of pearly lustre, which are not translucent like the quartz grains, and which also are considerably softer, being scratched by a knife blade very easily. On placing some of these grains before a gas blast lamp they will be found to melt to a glassy bead. This mineral is feldspar and it differs completely from quartz in that it is not refractory. It is what is called a "flux," that is, it helps vitrify the clay and it does so very gradually. Although feldspar does not melt at the temperature at which brick clays are burnt, it nevertheless behaves as a flux, and its fusion action begins at a comparatively low temperature. While the melting point of feldspar is about cone No. 8, its fluxing action begins as low as cone 05. Feldspar, therefore, is a useful constituent of our brick clays, and it practically never occurs in excess. The greater the amount of feldspar in a clay of this kind, the better the latter is suited for the production of hard-burnt ware. However, the feldspar in order to accomplish its function most thoroughly must be fine grained. In most sedimentary clays, it appears in this condition.

Feldspar itself possesses no plasticity and hence behaves similarly to quartz in reducing drying shrinkage. If it were possible to add fine grained feldspar to a clay and mix it thoroughly with the latter, we would find that the vitrification would be accelerated in a very gradual manner. This we could illustrate by adding to a clay various amounts of fine grained feldspar; for instance, amounts corresponding to 2, 4, 6, 8, 10, and 12 per cent. These mixtures we would pug and blend thoroughly, and on burning them to the best kiln temperature we would find that the porosities of the burnt bricks, as determined by the absorption of water would decrease with the amount of feldspar added. This decrease in porosity, or, in other words, the increase in vitrification, would drop gradually for every interval of 2 per cent. and thus illustrates the characteristic action of feldspar.

Further examination of the deposits on our sieves will reveal some mineral matter present in the form of thin flakes, which float readily in water and we have no difficulty in recognizing them as mica; this material is well known to us by its uses on stoves and for similar purposes. Its main characteristic points are its cleavage and softness. As we know, a sheet of mica may be subdivided almost indefinitely into thin layers. This mineral is hardly ever lacking in clay. It is non-plastic and being usually of very fine grain, it contributes practically nothing towards improvement in drying. It is found to fuse at a temperature somewhat above that of feldspar, and while the latter burns to a pure white glass, mica produces a greenish or even almost black fusion. From this we learn that mica is a flux similar to feldspar, although considerably weaker in its action. Since its amount in clay is usually fairly small, it is not of great importance. There are, however, clay deposits very high in mica in which its effect is very prominent. Such clays, however, are not found in Wisconsin as far as the writer knows.

Again giving our attention to the residues found on the sieves we observe still another variety of minerals which we recognize most easily by its behavior toward acids. On adding a drop of acid, like muriatic acid, to a grain of this material it will be found to effervesce quite vigorously. It is evident, therefore, that this mineral is carbonate of lime, the effervescence being caused by the escape of the carbonic acid from this compound. In the Wisconsin clays we detect the presence of this substance very frequently, and we find that its size of grain varies from coarse pebbles down to the very finest particles of microscopic size.

Carbonate of lime when heated will lose its carbonic acid at a good red heat and we have left caustic lime, or quick lime. On adding water to the lime we observe heating and a violent combination of the water with this base, while at the same time, the resulting product, slaked lime, appears to have increased in volume.

In discussing the function of lime in clay we must clearly distinguish between fine and coarse lime. By fine lime we mean that kind which passes 120-mesh sieve. Lime in this finely divided state behaves as a flux. However, its action is entirely unlike that of the feldspar, inasmuch as it accelerates vitrification, not at a slow rate, but very rapidly.

The fluxing power of lime which becomes active so very suddenly is therefore a source of considerable trouble to the manufacturer. The difficulty is due to the fact that vitrification and fusion are so close together that the minute the clay begins to vitrify any small rise in temperature will bring about a softening of the clay, or even fusion. Since it is difficult for us to maintain uniform temperatures throughout the kiln, and since invariably some parts of it are hotter or cooler, it is readily seen that the burning of vitrified bricks from lime-carrying clays is a matter of extreme difficulty. The safest policy, therefore, is to burn the bricks just high enough so that they may obtain a reasonable degree of strength without attempting to bring about vitrification. For this

reason calcareous clays invariably are burned into porous bricks, owing to the fact that it is impossible to burn dense material. At the same time the clay becomes more porous than red-burning clays, due to the escape of the carbonic acid from the clay in the burning. It is readily seen that the finer the carbonate of lime contained in the clay is, the more intense will be the above fusing action.

On the other hand, if the limestone occurs in the form of pebbles or larger particles, the fusing action is not so marked. But another difficulty arises. While the fine-grained lime unites chemically with the clay producing a lime silicate, the coarser particles are unable to do so. They will remain simply as granules of caustic lime which are combined with the clay only on the surface. If, now, the bricks are stored away or used in a building, after some time water will penetrate into them. As soon as it has passed through the clay surrounding the lime grains and has come in contact with the latter, it is obvious that they will become slaked. As soon as this has taken place the volume of the lime particles will increase, that is, they will swell with such a force that the brick may be disintegrated. If this happens near the surface, spalling will naturally take place. From this it appears that the trouble caused by coarse lime is very serious indeed, and that it is therefore preferable either to remove the coarser grains of limestone by screening or some other method of elimination, or to reduce all of it to such a fineness that it will do no harm. In other words, the cost of preparation becomes more expensive, and the best way out of the difficulty would probably be to adopt a combination treatment which will eliminate as many of the lime pebbles as possible, and to follow this up by grinding as fine as it can be done commercially.

It is an interesting fact of which use is made in Europe that when bricks containing grains of lime are immersed in water, as soon as they leave the kiln the disturbing effect of the slaking is far less evident. In many European plants arrangements are provided for lowering the barrows of bricks coming from the kiln in pits filled with water and for this purpose a double platform elevator is used.

The condition under which the bursting out of the lime specks will take place is bound to vary according to how thoroughly the particles are protected by the surrounding clay, and whether this clay is dense or porous. In some cases it may take quite a while for the water to penetrate through, to the grains of lime. In others the slaking may take place very rapidly. Hard burning may delay the slaking of the coarse grains, but unless the brick is burnt so dense that no water can pass through it, this action is bound to take place in time.

Still another peculiar defect may be observed in some limey clays in which the content of carbonate is quite high, going as high as 30 per cent. and above. In this case the manifestations are a crumbling and dusting of the brick as a whole. This action usually takes place quite rapidly after the bricks have left the kiln, or even in the kiln, and it is due to the formation of a peculiar chemical compound, a lime slag, which on cooling changes to another chemical compound, this change being accomplished by a large increase in volume. This force is great enough to cause the particles to disintegrate to a fine powder. The manufacturers of Portland cement observe a similar phenomenon wherever they produce a cement somewhat low in lime. In this case the trouble is called "dusting."

Continued in next issue.

The Gohn Brick Works on Locust St., Columbia, Pa., is working overtime to catch up with the great number of orders on hand.

FUEL AND POWER FOR CLAYWORKING PLANTS.*

By Lemon Parker, St. Louis, Mo.

The study and development of special appliances and methods of saving costs is very necessary to a manager or superintendent, and the most enterprising brickmakers are constantly seeking for information in this direction.

To begin the discussion, the digging of clay has advanced from the hand pick and shovel to the steam shovel and other labor-saving appliances: from the transfer by mule cart and barrow to electric and steam haulage, and from older methods of manipulation of clays to the machinery of today, making the raw product into its final form with little hand labor. From this point less general progress has been made.

Extravagant burning methods of old-style kilns, with their wasteful fuel consumption, are still largely employed, and the old slide-valve engine is still a favorite means of developing power.

As to the economical use of fuel in kilns, I am distinctly in favor of the development of the continuous kiln, not necessarily but preferably, along the line of producer gas, and having experimented along that line, I know that the field has much promise.

Some of the continuous kiln plans followed permit of the burning of fuel right in the body of the kiln, with its very objectionable marking and discoloration from contact with ash and cinder. Another plan leads producer gas over a long distance, permitting loss from cooling, endless trouble in starting and liability of sooting up of kilns and gas ducts.

The third and most promising method is that in which the producer gas is made and used right at the kiln, lessening the liability of trouble from sooting and utilizing more of the initial heat developed in the manufacture of the gas. The objections found are those common to gas producer plants, such as careless firing, too thin beds of coal causing overheating of the generator, or on closing down heat radiation from the body of kiln melting hoppers and bells. Conditions easily remedied and another possible fault an excessive and long continued period of oxidation. I believe this or other methods of fuel saving in kilns will develop into a practical process in the near future.

In any of the foregoing continuous methods of kiln burning the saving is not in the form of the firebox or in the application of heat through burning of fuel gas, but entirely due to use of heat usually allowed to pass out of the stack.

There is another method of heat saving which can be applied to ordinary kilns, that of extracting the heat of a cooling kiln by fans and forcing it through drying tunnels, which seems to find favor amongst some of us, but is this as promising a field as the continuous arrangement, which extracts the heat from the products of combustion to heat up a kiln just starting and at the same time takes the highly heated air from a cooling kiln to furnish the air of combustion?

In one instance the highly heated products of combustion are allowed to escape. In the other case a large per cent. of both heat from products of combustion and cooling are extracted and used.

I admit the first of the above propositions seems to have a wider use today as the problem is simpler, but the continuous proposition appeals strongly to me from its greater economy. I know the heating of drying tunnels from waste heat of some kind is desirable, I may say necessary, but why can't we look to the engine, with its exhaust direct to atmosphere, for this?

*A paper read before the Twenty-Third Annual Convention of the National Brick Manufacturers' Association, Rochester, N. Y., Feb. 16, 1909.

In my experience, 200 horse-power of exhaust steam used during working hours will heat 90,000 square feet, or over 2,000,000 cubic feet, and 200 horse-power of live steam at night is more than sufficient in zero weather.

As the exhaust steam used during the ten working hours is naturally charged to power, the extra coal necessary at night is only chargeable to the heating cost, or one-half the expense usual wherever live steam or methods other than from waste heat are employed.

With properly designed continuous kilns using either coal or gas fired furnaces directly in contact with kilns, and kilns so placed that the leads of flues from one kiln to another is by the very shortest and least tortuous route, and of ample capacity, a saving of from 40 to 50 per cent. in fuel should result. Repeating a statement made before, the natural tendency will be toward an oxidizing rather than a reducing condition, possibly not desirable for some kinds of clay ware, and, indeed, herein is one of the weak points of the continuous system. Should the air of combustion not be hot, as it is usually toward the end of a burn, very high temperatures are sometimes hard to maintain. As to the quality of fuel, speaking from experience with ordinary and good grades of soft coal, a medium grade should answer. I do not favor under any circumstances the use of coal with much dirt or inert matter, as the same adds to its weight and has to be removed in clinkering, wasting by carelessness a large per cent. of good fuel, as witnessed by the presence of a great and unknowable quantity of unburnt coal in our ash heaps.

There are a number of factories both in Europe and America which have tried out various systems of kilns, tending toward economy in fuel, and the data obtainable on this subject should be fairly reliable and complete.

I have also heard of economizers built in stacks for the purpose of extracting heat as the gas of combustion leaves the boiler furnace. This might be worthy of consideration as one of the factors tending toward economy. Outside of the above, a somewhat Utopian scheme which hardly appeals to a practical man consists in the suggestion to utilize some of the heat lost in the walls of a kiln through water tubes built therein to generate steam, but it seems to me that a project of this kind, if at all practical, calls for enlarged fireboxes and more fuel to generate extra heat units necessitated by the rapid absorption of heat in the kiln walls necessary to generate the steam.

Discussing the same problem from the power side of the question under three heads: First, a plant equipped with steam exhausting into the atmosphere and old-fashioned kilns, up or down draft.

Plan A. The simple and economical plan here would be to place a system of exhaust steam pipes throughout the plant, or in drying tunnels as called for by existing conditions, utilizing the exhaust steam in the day and live steam at night, or, better still, if construction of kilns will permit, utilize the hot air from cooling kilns passed through a box containing steam coils and then to buildings or tunnels as desired. During the day the hot air from cooling kilns, meeting the heated steam coils from exhaust of engine, would furnish a large quantity of heat ordinarily allowed to go to waste, and at night only the heated air from kilns plus steam used for fan and electric lights, if any. Objections lie in the use of live steam at night in the one instance, and in the other to the use of power to run the hot air fan day and night, but this is not a serious hindrance, as the power used would not make cost appreciable against the area heated.

The above methods are in use successfully in several places. Of course the heat lost through the kiln stacks by the passage of the unused hot products of combustion must be very large.

Plan B. Combining the above exhaust and live steam heating with continuous kilns should result in a saving of from 30 to 50 per cent. of fuel used in kilns and permit of heating entire plant where power enough is used, free of all costs, for ten hours in the day, and live steam for fourteen hours at night, or about 40 per cent. saving on the plant heating item, resulting in a saving of 40 per cent. of entire fuel bill for kiln firing and heating. Overcoming this waste of live steam while power is not used, is the problem to be considered, and remains a problem still unless the steam power were used day and night. To this point, therefore, neither proposition A or B is satisfactory; they are only steps in the right direction, the great difficulty being that we have to use heat when it is not possible to get it as a waste from power or other source, except as in case A, which has its drawbacks of loss of products of combustion to stacks.

Plan C. Were the various schemes of fuel gas power satisfactorily carried out on a soft coal basis, we might find a means of some further economy, as it is claimed a large saving results in using explosion engines over that used in converting heat into power through steam. Steam, of course, is an ideal way to furnish both power and heat, but it is too costly if the more direct method of obtaining power from fuel gas were available on a practical basis, and with it a good way of using the waste heat generated by the explosions.

The whole problem lies in the proper use of two by-products called hot products of combustion and the stored heat, usually allowed to go to waste through our boiler stacks and out of cooling kilns.

My experience on a plant only partially equipped with fuel-saving devices, shows, taking an average for ten years, with drying rooms containing 90,000 square feet, or 2,000,000 cubic feet of cubic area, and 57,000 cubic feet of kiln area and 200 horse-power in power required about one-half of a ton of coal per ton of burnt product. Of course red brick yards might make a much better showing, because they do not need the high burning temperatures required for firebrick, and the power used for manufacturing purposes is very much less.

PROPERTY OWNERS OBJECT TO DUST FROM BRICK KILN.

Property owners in the southeastern section of the city of Pasadena, Cali., have entered such vigorous protest against the brickyard of the Simons brothers that the city council will soon take up the matter of providing an ordinance which shall restrict this industry to sections outside of the residence district. The Simons brothers' brick yard is almost surrounded by new residences of the better sort and the dwellers in that neighborhood protest they are unable to open their windows when the yard is in operation because of the dust which comes from it and sifts into their carpets and furniture.

The owners of the brick yard protest that they were there first and the presence of the yard in the neighborhood does not constitute the nuisance the protestants say it does. They are understood to be willing to sell out at a fair price, but the figures which have been quoted them from time to time do not come up to their estimate of the worth of their buildings and holdings. If an ordinance is passed which will prohibit their working the yard the case will undoubtedly be taken into the courts in order to decide just what constitutes a nuisance. Both sides are said to be determined to thrash the question out thoroughly and will spare neither money nor legal talent to secure the best light on the question.

DOES DRAINAGE PAY?

Nearly every farmer has dug an open drain at some time to carry off surplus water. If he has dug through hard ground and sloped the sides of his ditches at an angle of one in three the ditch has usually remained in service from five to fifteen years, usually not longer. If he has dug through mucky land or has made his ditch banks nearly vertical usually the first winter's frost has caved in the ditch and given him days of back breaking labor the next spring in order to clean out the drain.

Such ditches have their value in providing temporary drainage while the first surplus of water is being removed and until the ground has settled and hardened sufficiently to allow of more permanent forms of drainage, such as tiling. They cut up the land into small areas, are a nuisance both in ploughing and cultivation and constitute only a makeshift method of drainage, adequate only for temporary use in the removal of excess surface water. Of course, in large drainage districts the main canals must be open ditches; but the farm drains should be lines of tile into the open canals along the boundaries of the farm.

For local surface drainage the U-shaped ditch cut by a slip scraper or a road machine is much better than the other forms of open ditch. By ploughing a few furrows, scraping out the surplus dirt and then ploughing and scraping out the hard subsoil a broad permanent hollow can be formed.

It frequently pays to scrape the surface soil back into the ditch and to seed down. Then soil erosion is prevented, mowing machines and rakes and all larger farm machinery can work across the ditch and the continuity of the fields is not broken. The ditch in most instances should not be ploughed for cultivated crops. The cultivator can ride through, however, from the corn row on one side to the same row on the other. This cannot be done with the steepsided open ditch.

Each farm, in fact, each field, constitutes a definite drainage problem. The character of the soil and subsoil, whether loam, silt loam or clay, stone free or stony, subject to seepage from above or level and clogged with stagnant water, constitutes one important factor to determine the location of drains, the depth at which they must be laid, the frequency of the drain, the size of the tile and the slope of the drainage line.

The "lay of the land" is also, of course, a controlling factor. A heavy clay soil lying on a slope requires a much greater frequency of drains, though not necessarily a larger diameter of tile, than would a loose loam lying on the same slope. Other things being equal, the heavier the soil the nearer together must the tile lines be laid.

The depth of the drain also varies with the character of the soil and the kind of crops to be raised. Less than two feet and a half is too shallow. Frost action, the roots of crops and trees and the burrowing of moles are all likely to cave in and obstruct shallow tile systems. Moreover, the shallow lines drain back only a short distance on each side of the line, while deeper laid lines drain a far wider "land," and are therefore cheaper in the end.

Similarly the size of the tile to be used varies. Few drainage engineers will install tile of less than three inches in diameter, and the best size for land which greatly needs drainage is probably four inches for the laterals, six inches for the main ditches and larger sizes for the principal outlets. Each drainage plan must be carefully figured for these points. It is well to hold in mind, also, that tile drain will never completely carry off surface water from a sudden heavy shower. There must be some surface provision for this "run-off" water, while the tiles perform their proper function of removing included soil water, thus lowering the level of standing water, and making provision for soil moisture circulation and the proper airing of the soil.

"What will tile drainage cost?" That depends on the individual field. A single line of the tile laid through a fairly well drained field to drain low spots or to relieve stagnation over a loamy soil, too level for perfect inside drainage, may cost only $4 to $10 an acre, and will last almost indefinitely. A complete tile drainage system for heavy clay soils, swamp lands, muck areas or seepage waters from higher lying land might cost as high as $40 to $50 an acre. Practically all farm drainage necessities lie between these extremes, and the majority of drained farms have been tiled at a cost of $12 to $20 an acre.

"Does it pay to drain?" In the vast majority of cases the answer is unqualifiedly yes, but the drainage system must be well planned, well constructed and an adequate first cost must be incurred. It does not pay to "save money" with cheap work, infrequent ditches, shallow depth and unprotected outlets. Well built systems are permanent. No one knows how long the best ones will last. Some have lasted sixty years and are apparently as good as new. Burned clay laid below the frost line is practically indestructible, and well made ditches, with good alignment, insure permanency.

As to cash returns, it would be well to calculate that an increase in crop or an increase in available land area must be made sufficient to pay the annual interest charge on the first cost of the system. Of course, some farsighted farmers would also be willing to consider a saving in labor annually forever as something of a return on the investment. Many of us, however, would want money in hand as an equivalent for money spent. The increased selling value of the land drained will usually account for the initial cost. Stated differently, the cost of tile draining is part of the cost of the land. It would scarcely pay, indeed, to pay $40 to $100 an acre for the title to the land —merely the right to use, sell or bequeath it—and then to refrain from putting the purchased land in such condition that it could be used, sold or bequeathed forever to the best advantage. Viewed in this light, drainage, fences and farm buildings are all in the same class. Land is of little value without them, and the man who cannot afford them cannot afford the land.

An increase, due to drainage, of one bushel of corn an acre at 50 cents a bushel would pay 5 per cent. interest on $10 invested in tiled ditches, or about twenty rods of ditch, on that particular acre. An increase of one bushel of wheat would pay 8 per cent. or more. An increase of one hundred weight of hay or one bushel of oats or potatoes or the proper fruiting of one side of one apple tree would constitute a paying investment.

Look out at your fields next April and ask them, "Would drainage pay this year?" Then pay heed to the answer.

FRISCO SYSTEM FINED FOR CONTEMPT BY CORPORATION COMMISSION

In the case of the Bartlesville, (Okla.) Vitrified Brick Company vs. the Frisco Railway, in which the railroad was found guilty of a rate excessive .7 of one per cent, the railroad refused to refund the excess charges when their attention was called to the matter by the corporation commission. Complaint was then filed. The railroad then admitted the overcharge but laid the violation to "inadvertence or a mistake of its agents." Rather late in the day for such a plea, considering that we called your attention to the violation before complaint was filed, said the commission, and assessed a fine of $100 and costs.

FULL TEXT OF AGREEMENTS BY WHICH POTTERS INSURE PEACE.

Agreements adopted by the conference committees of the National Brotherhood of Potters and United States Potters' Association, binding operatives and operators of the potting trade for two years, follow:

1. That in case of a vacancy in any clay branch of the general ware trade when it is found impossible to secure a competent journeyman of the particular branch in which the vacancy exists, it shall be permissible for any journeyman in any other clay branch of the general ware trade to accept such position.

2. That no one but a journeyman clay worker shall be permitted to accept a sticking-up bench.

3. That the ratio in the pressing and casting trades be fixed at eight journeymen to one apprentice.

As a substitute for the propositions 1, 2 and 3 it was recommended that the clay shops be considered as one trade, and that one apprentice system be established to cover the same, instead of having an apprentice system in each and every department, as at present, this proposition to be submitted to a vote of the trade, and if accepted, the ratio of apprentices to journeymen to be agreed to later by the Labor Committee of the United States Potters' Association and the Brotherhood.

The resolution providing for the dipping of sacks by the firm was agreed to where oil of creosote is used.

That when an apprentice is put on to learn kiln work, he shall serve 18 months on glost and 18 months on bisque, or vice versa, when it can be done without necessity of discharging a journeyman on the opposite crew.

The proposition providing for a day wage basis for placing a kiln entirely with green saggers, where ware is placed in such saggers, was left to the men and the firm to determine the price.

All scraps and broken ware to be returned to the slip-house at the firm's expense.

That all new kilns, or any kiln having a new crown or bottom, shall be measured after the third firing.

That all ware boards in the dipping department be washed after each time used was considered a local condition to be taken up as a shop matter.

The apprentice dipper in the third or last year of his apprenticeship shall be given hollow ware dipping, provided he has not had an opportunity to dip this class of work during the first two years of his apprenticeship.

That when kilndrawers are required to draw kiln at night or on Sunday they shall be paid time and a half for such work, provided that such condition is not caused by the refusal of the kilnmen to go into the kiln at or before noon time. Five a. m. to eight p. m. to be considered as day time.

That the seven hour clause shall not apply when two kilns are to be drawn by one crew on the same day at the same pottery.

That the heat limit for drawing kilns shall be 130 degrees Fahrenheit, the test to be taken on the second ring two feet from the crown of the kiln; kilns showing a greater heat than this may be drawn at the option of the kilndrawers.

The proposition on china handling and extra pay to turners for loss from cracks in china jiggered work were referred to a special committee of china manufacturers and operatives.

That the piece work price of blocking and casing be abolished and $4.00 per day shall be paid for this class of work, the journeyman mould-maker to receive 10 per cent. less than list price for making moulds and each mouldmaker shall draw his pay from the office; buckets, coddles and soap shall be furnished by the firm without extra cost to the mouldmakers; this proposition does not apply to shops engaged in the exclusive manufacture of china.

That the proportion of apprentices to journeymen mouldmakers in the entire generalware trade shall not exceed one to four; that no shop shall be entitled to more than 50 per cent. of its full force of mouldmakers in apprentices; that no shop shall be entitled to a second apprentice until it employs at least four journeymen, nor a third apprentice until it employs at least seven journeymen; the term of apprenticeship shall be five years; the apprentice shall receive his wages directly from the office at the following scale of discounts, figured from the full list, not being subject to the extra ten per cent.

First year, 33 1-3 off; second year, 25 per cent. off; third year, 20 per cent. of; fourth and fifth year, 15 per cent. off; no journeyman shall be discharged to make room for an apprentice and no apprentice at present employed shall be discharged for the purpose of establishing this ratio.

The proposition asking that all crates equal to the English "Humbug" crate in capacity be paid for at the rate of 75 cents each, was referred to the Eastern Standing Committee.

As a substitute for the proposition to establish a uniform size list for all crates and boxes, it was agreed to fix a maximum size for such articles as listed, the same to be taken up with the Labor Committee of the United States Potters' Association later.

That all potteries suspend operations at noon on Saturdays and pay at noon on pay Saturday; left optional with the firm.

That in the employment of finishers by piece workers, no firm shall object to male finishers solely upon the grounds of sex.

As a substitute for the proposition asking for the abolition of Note 1 in the Uniform Size List, it was agreed to recommend to the original Size List Committee that they take up the matter for investigation and determine whether there are any abuses in the sizes of cover-dishes, casseroles, coupe soups, chambers, etc., and if such abuses are found to exist, aim to correct them, and that they extend the Uniform Size List wherever it may be properly done to articles not now included.

Any time during a depression of trade where the starting of apprentices would work a hardship, any petition we might make to the manufacturers regarding the same will be given proper consideration.

That the distance for carrying out moulds, dust, etc., was considered a local matter, and should be treated as such.

That the operatives shall submit their propositions at least 60 days and the manufacturers submit their propositions at least 30 days before the conference.

The agreement to be known as the "Pittsburg Agreement." The 1907 agreement known as the New York agreement was reaffirmed insofar as it does not conflict with the terms of the Pittsburg agreement.

The Pittsburg agreement to cover a period of two years, beginning with the first full pay in October, 1909.

All propositions not enumerated in this list were withdrawn.

Pocahontas, Va.—The brick plant of the United States Coal and Coke Company, located at Oran, W. Va., on the main line of the Norfolk and Western Railway about two miles from this city, has resumed opertions. This plant has been idle for the past eighteen months, and resumption of work there is welcomed by the people of the city, as much benefit is derived from that plant.

THE MAKING OF A MECHANIC.

In replying to an editorial in the St. Louis Republic which he regarded as unjustly criticising trade schools, Mr. Anthony Ittner, a well-known St. Louis manufacturer, has this to say in defense of the method of giving technical and practical training in these schools, as compared with the apprentice system under the domination of trades unions:

I was very much pained this morning on reading your editorial headed "Trade Schools." And then to see with what assurance and positiveness it was written, made it the more aggravating, as follows: "Two or three things are writ large on the record of American experience with industrial educations."

In the first place I was not aware that the experience of this country with industrial education, in so far as it aimed to produce finished, skilled mechanics, was writ anywhere, or at all on the record of American experience.

There are a great many good people in this country who are earnestly striving to have it so writ as you mention, and it is even hoped by some that this may be accomplished during the present generation.

Now then for your three points, which I desire to consider as briefly as possible.

"First, it is necessary to remember that no school ever created an effective journeyman out of hand. It takes a year or so of practical work after graduation to do that."

There seems to be a studied purpose among some people to make it appear that a finished mechanic cannot be graduated from a trade school, but I would never think for a moment that one of the leading newspapers of the country and one that had celebrated the one-hundredth anniversary of its existence, could have any selfish purpose in making it so appear. Now in this matter I feel deeply in earnest, and do not feel that I can afford to let any such false idea as you here advance gain currency.

Of course, I am aware that not all skilled trades are alike in comparison as being taught either in the regular industries or in a trade school, but of the trade in which I served an apprenticeship in this city, commencing fifty-six years ago, I can speak, and I want to say that a boy entering the bricklaying class in a trade school would receive more technical instruction during his first day at school than I received during the entire period of my apprenticeship, and the hand work that he does is so nearly what the apprentice receives in the actual industries as to leave him at no disadavntage in this as compared with the boy who serves an apprenticeship in the old way, so that in so far as the trade of the brick-layer is concerned, a boy who would graduate from a trade school would be a far better skilled workman than one who had served an apprenticeship in the industries.

There may be, and I admit that there are skilled trades in which this comparison would not hold good to such an extent as in that of bricklaying, or any of the trades in the building industries, to mention a few, such as locomotive building and machinery work of all kinds and engine building, but I am pleased to say that in these and some other industries they are already supplied with the advanced apprenticeship system to the extent that it would be just and proper to call them trade schools. To cite a few, for instance, such as the General Electric Company, at Lynn, Mass., and the Baldwin Locomotive Works and other large establishments throughout the country, which, as I have said, all have their advanced apprenticeship systems, which are very much similar to trade schools, rendering regular trade schools in these particular lines of industry unnecessary, since they are at present so well provided for, and, besides, as I understand, they are not controlled by the restrictive rules of labor unions, limiting apprenticeships.

Your mention of the necessity of a year or so of practical work after graduating in a trade school, in order to make a finished workman made me smile, since it is the argument so universally advanced by labor leaders. It is now some eighteen years since a movement was inaugurated by the then Mechanics' Exchange of this city, looking to the establishment of a trade school. In this movement I took part, and have been actively working in the interest of industrial education for the American boy ever since; am now the chairman of the Committee on Industrial Education for the National Association of Manufacturers and chairman of a similar committee for the National Brick Manufacturers' Association and a member of the Board of Managers of the National Society for the Promotion of Industrial Education, and during the years mentioned have devoted a large part of my time and spent considerable money in this interest, and yet if I could be made to believe that a finished skilled workman could not be graduated from a trade school I would never utter another word or make another effort looking to their establishment.

Do you ask why? I answer that it would be time and money worse than wasted! in fact, thrown away, since, if the boy would not be considered a full-fledged skilled mechanic, and by reason of the limitations placed upon apprenticeships—and in some trades an outright bar would confront him—not being able to complete his trade, the knowledge of a trade which he had acquired in the school could be of no practical use to him.

Now, I think I have said about all there is to be said on the subject, but it will be necessary to mention and touch upon your second and third points.

"Second, the schools must decide exactly what they want to do before they begin." This goes without saying, and will follow as a natural result; and as to "foremen, assistant superintendents, erectors and men for other supervisory and special duties" (which you say are not present given by any school, and in which you are mistaken), these positions will develop as they should develop out of the most efficient skilled workmen. You have heard the old and true saying that, "You cannot make a silk purse out of a sow's ear," and likewise you cannot make a superintendent, foreman and such out of a person who has not the natural ability and qualifications to make him a director of men, as I said, they should be allowed to develop from the ranks as their natural aptitude demonstrates their capability for advancement.

Now we come to your third and last point. "Third, after the boy is taught there comes the question of his entrance into the shop through the cheval-de-frise (whatever that means) of the special regulations that obtain in particular trades. It is no use to teach a student a trade which he will not be permitted to practice after he learns it." This is fully covered by my answer to your first point, and what you meant by cheval-de-frise may be what I mean by limitation and outright proscription, and yet I am not willing to admit that we are living under a despotism, and that the individual liberty clause in the Constitution of the United States is a dead letter. You finish by saying that "Conditions vary much in the different industries, it will take careful and comprehensive study to work out a practicable plan"; in this I do not agree with you; my opinion is that it will adjust itself. That it will come as easily and naturally as water finds its level, or, using a more common and crude expression, "just like falling off a log."

W. P. BLAIR EXPERT ON ROAD COSTRUCTION, TELLS SOME INTERESTING FACTS ABOUT BRICK ROADS IN GOOD ROADS MAGAZINE.

In an article written for the Good Roads Magazine, Will P. Blair, an expert on road construction who is well known says:

A vitrified brick highway is the one kind of pavement for county roads that has clearly passed the experimental stage. The most important special features that have been proven beyond all dispute are as follows:

They are the most economical.

They are the most satisfactory in use.

Their proper construction in all its details are easily understood.

It is true that they may and generally cost one-fourth to one-third more in the first instance than any of the highways made of macadam, broken stone, etc., but the cost of the highway is not to be measured by the first expenditure, but must be measured by the cost of the first expenditure plus the required cost to maintain it in the first class condition for the purpose for which it was built.

There is another element of cost that must be considered by way of comparison in the economy of a brick road with that of any form of gravel or macadam, and that is the deteriorated condition which always obtains for a considerable lapse of time before a repair is or can be made.

By way of illustration the following facts are certainly proof: Six years ago the city of Linton, Ind., laid a brick street from the center of town to the corporate limits. Three years afterward it was decided to construct a broken stone highway from the terminals of the brick out into the county. For more than a year past the macadam road has been in such a condition that it is impossible to haul as much tonnage per vehicle by 50 per cent as was hauled over the road when first constructed. The brick portion is in perfect condition. In other words, the macadam road was deteriorated 50 per cent in three years, while after six years' wear the brick road shows in perfect condition.

The writer recalls another instance where a macadam road in Northern Ohio was built at a cost of $76,000. It has proven so worthless in use that farmers along the road tiring of the excuse for a road, have recently petitioned for a brick road, thus correcting the mistake they made, and being willing to throw away $76,000 in order to secure something they can use every day in the year.

The brick road is always satisfactory in use because always in repair—never a mudhole or a chuckhole, free from dust, does not originate dust. The traction resistance is so little that a maximum load can always be hauled. Unaffected by weather and equally good in all seasons of the year. In New York State a few years ago $50,000,000 was appropriated for good roads. Many miles of macadam were constructed in the past few years, yet only last winter a bill was introduced in the legislature appropriating $1,000,000 for the repair of these macadam roadways, and it is stated that many of them are in very bad shape and that the cost of keeping them up is far in excess of what the localities can afford.

Therefore, it has been proven that the brick paved highway while more in first cost, more than makes up for the difference in a few years.

A sixteen-foot brick roadway in Pennsylvania cost from $16,000 to $20,000 per mile against macadam at $7,000 to $12,000, yet brick roads more than overcome the difference in from five to ten years.

In Cuyahoga county, in the vicinity of Cleveland, Ohio, the advantage of the brick road is amply proven. In this section the county pays 65 per cent to 85 per cent. of the first cost, the balance being paid by the property along the district. The benefit is only partly derived from the 50 to 200 per cent increase in property values along the brick roads. The farmers along such highways are able to add 50 per cent to the loads on their wagons of produce going to the city. The speed of the vehicle is increased, saving much time, repairs to wagons, etc., as well as enabling farmers to haul every day in the year regardless of weather conditions. The day it rains and no work can be done on the farm, hauling can be done, for the brick road is never muddy.

The construction authorized in Cuyahoga county provides for the paving of 117 miles of brick roadway this year. Already $3,394,682 has been expended on 176 miles of brick paved county roads in this county, making an average cost of $19,288 per mile. Notwithstanding this first high cost the people consider these roadways a splendid improvement.

PLASTICITY OF CLAYS.

An explanation of what appears to be a satisfactory method by which workers in clay can accurately ascertain the plasticity of any given clay has just been published by the Geological Survey in a bulletin (No. 388) prepared by H. E. Ashley.

Heretofore an accurate judgment as to the qualities of a particular clay could be formed only after long and costly experiments. Clays, apparently similar in nearly all respects, were found in actual manufacturing to give results very different from those expected; and of late years it has become increasingly important to devise some test by which their qualities could be quickly and easily determined in advance of expensive installations.

Mr. Ashley, acting for the Geological Survey, under an appropriation by Congress for the investigation of the structural materials of the United States, has discovered that the degree to which certain dyes, of which malachite green seems to be the most satisfactory, are adsorbed by a given clay furnishes a very satisfactory index of its plasticity, which, of course, is the most important of all its qualities.

Adsorption is the property by which dyes and other substances are extracted from solution and incorporated into the thing dyed. It differs from absorption, which is incorporation of a liquid as it stands, irrespective of what it holds in solution. Adsorption is especially characteristic of the peculiar substances known as colloids, which form the bulk of clays, and on which their plasticity is believed to depend. The amount of dye, therefore, which a given amount of clay will adsorb from a standard dye solution indicates pretty accurately the proportion of colloids that the clay contains.

Tests by Mr. Ashley of most of the well-known commercial clays with a standard malachite green solution have shown that their adsorption of the coloring of the dye corresponds very closely indeed with their actual known plasticities. As tests with malachite green give expected results where the plasticity is already known, it is inferred that they will prove equally accurate in determining the plasticity where this has not yet been ascertained.

Bulletin 388, which is entitled "The colloid matter of clay and its measurement," can be had free by applying to the Director of the United States Geological Survey at Washington, D. C. Its nature is highly technical.

TRENTON ADVANCES CERAMIC INTERESTS TO EXTENT NEVER BEFORE APPROACHED IN U. S.

Within the last month Trenton, N. J., has advanced the interests of ceramics in this country in a fashion never before approached by American manufacturers.

Three orders for tile, just filled and shipped by the Trent Tile Company, are among the most important consignments of the kind on record in the United States. In fact, in one instance, the material produced is calculated to inaugurate an entirely new era in the application of ceramics.

In a second instance, the company has completed one of the first orders in the country for tile in red crystal glazes. This latter accomplishment follows a lengthy series of experiments on the part of practically all of the ceramists this side of the continent and the first fruits of the successful attempts in Trenton are to go into the foyer of the magnificent new Bronx Theatre, in New York.

Large and handsome many-colored pictures in tile, to be inserted in the heavy wainscoting of the new historic Hall apartment house, in the metropolis, marks the advent, in the United States, of the use of permanent and imperishable mural paintings, in tile, in combination with decorative marble. This is essentially an idea of German architecture, followed first in England and only recently attempted in America.

The third shipment of the Trent Company, marking an important stride in the company's business, as well as advancing, generally, the cause of ceramics in decorative combinations will go into the main dining room of a new Dye Street restaurant, immediately opposite the new Hudson Terminal Building, in New York. This work, however, is much less pretentious than the others mentioned though its location is expected to attract considerable attention and maybe serve to increase the interest of architects in modern application of highly colored tile.

To produce a picture of New York City, as it appeared in 1607, true to nature and within a space of five feet six inches by four feet six inches, and to reproduce an old print showing Harlem, from Morrisania, in 1647 in a panel of three feet six inches by two feet six inches, and to present an accurate likeness of the trees planted in New York by Alexander Hamilton, in 1802, inside of two feet six inches by nine feet, all in ceramics of imperishable matt glazes, is indeed an extraordinary accomplishment.

And this is what has been done by Trenton skill and ingenuity for the decoration of the main floor of Historic Hall. Architect Albert P. Morris, of the Metropolis, is responsible for the thought and Charles B. Upjohn, chief of the designing staff of the Trent Tile Company, is responsible for the color and accuracy of the pictures. The matt color painting was executed by Norman E. Rulon, also of the Tile company, while the production of the material, including all the technical arrangements and the bodies and glazes employed in the three contracts, is the work of Charles P. Lawshe, general manager of the company.

The floor of Historic Hall, in the main corridor is to be covered with tile, in the design of a damask rug, in 14 colors, embracing a space of ten feet and six inches by eleven feet. The fine, old-fashioned fireplace, too, is to be of tile, and the words Historic Hall, in superior ceramic mosaics, are to be placed beneath the handsome surmounting mantel. All of this material is of the indestructible sort, even to the highest colors, each of which is fired to stand the ravages of time.

In the Bronx Theatre the panels of red crystal glazes are to supplant the imported tapestries formerly employed almost exclusively in decorating theatre foyers. The glazes will be fancifully set off with narrow rims of buff and a margin of tile, terra vitrea, in the extra rough. The latter is to be embellished with black cement grouting giving probably the highest possible color tone to the scheme. The panels in crystal will be three by six feet. This departure in decorations is of immense advantage to the tile industry, not only in Trenton, but throughout the United States, inasmuch as it opens up an entirely new field for high class ceramics in this country.

The dining room in the Dye Street restaurant is decorated with a wainscoting of tile six feet from the floor. It is all colored in buff, matt glaze, and painted in pinks and greens, harmonizing perfectly with the floor design, also of tile. The general style of the decorations here, including the walls and panel effects, is all l'art nouveau, showing the possibility of such an application from the standpoint of perfect combinations in this imperishable product.

All of the above described work in ceramics is notable from the fact that it is the most pretentious effort of the kind that has been made in Trenton in the last five years. Being along the line of purely ornamental tile, and also marking an epoch in the permanent application of mural paintings in this country, the undertaking is looked upon as especially remarkable. Where mineral and vegetable paints decay and decline, requiring periodical touching up and constant care in their preservation, particularly in public places, the same colors in tile are absolutely indestructible, and for this reason the ceramic decoration is fast gaining in popularity in artistic architecture.

ILLINOIS LEADS IN THE COMMON BRICK BRANCH OF INDUSTRY SAYS STATISTICS

The United States Geological Survey has just published a large chart, showing the statistics of the clay-making industries in 1908 by states and products, with comparative totals for 1907. This chart shows that the clay products of the United States in 1908 were valued at $133,197,762, compared with $158,942,369 in 1907, a decrease of about one-sixth. Every state and territory except Alaska is represented in this total, a fact which shows the widespread character of the clay working industries.

Ohio is the leading clay working state, reporting products worth $26,622,490, or 19.99 per cent of the total, Pennsylvania, New Jersey, Illinois, New York, Indiana, Missouri California, Iowa and West Virginia are the next largest producing states, in the order named.

Every state reported common brick, the total quantity being 7,811,046,000, valued at $44,765,614; this represents over one-third of the value of all clay products. Illinois is the leading producer of common brick, reporting 1,119,224,000, valued at $4,834,652, or $4.32 per thousand. New York is the second in quantity but first in value, the figures being 1,055,006,000, valued at $5,066,084, or $4.80 per thousand. The average value per thousand ranged from $3.97 in Kansas to $10.33 in Wyoming, with a general average of $5.73.

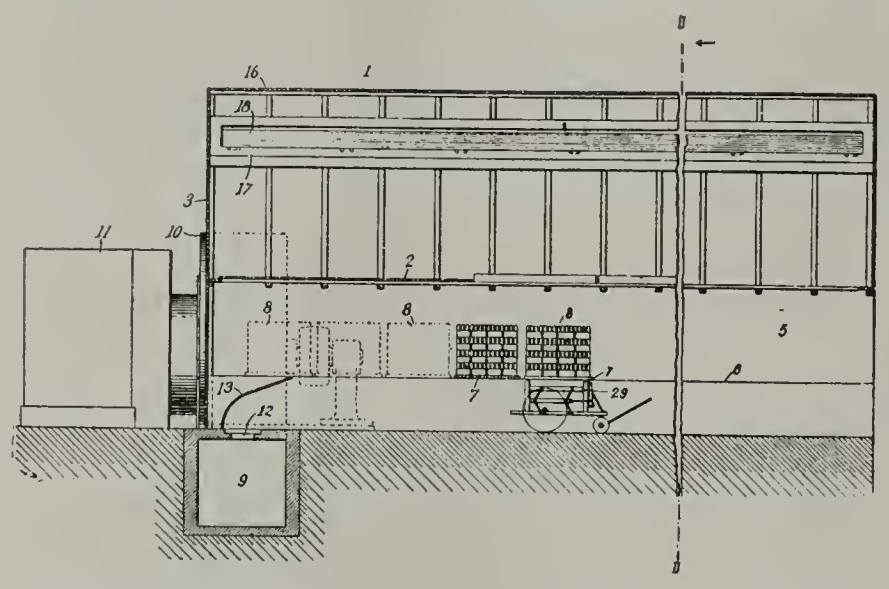
Drain tile reported a gain in 1908, the increase being from $6,864,162 in 1907, to $8,661,476 in 1908, or 26.18 per cent. This product finds its largest use in the middle west—Iowa, Ohio, Indiana, Illinois and Michigan reporting 89.84 per cent of the total.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

923,340. Apparatus for Drying Bricks. William F. Decker, Goshen, N. Y. Filed Sept. 29, 1906. Serial No. 336,782.

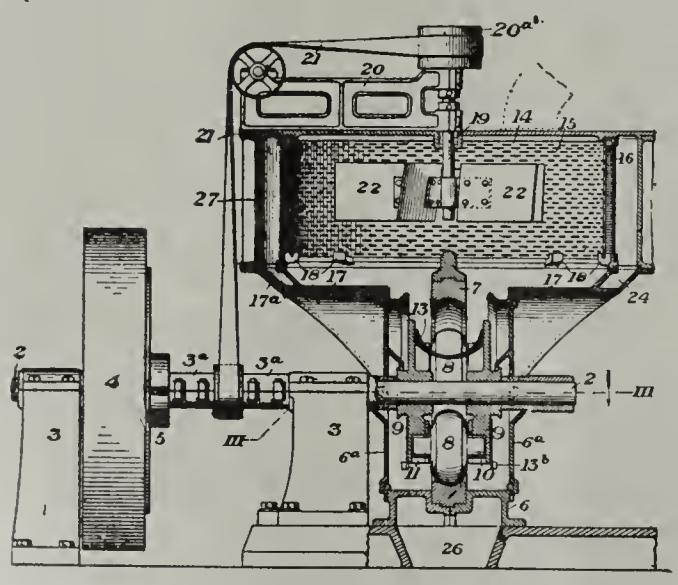
In a brick drying apparatus, in combination, a drying shed having a roof, a cupola on the roof extending longitudinally of the latter and having air-outlet openings in its sides, means for regulating the flow of air through said openings, a ceiling below the roof, the space below the ceil-



ing being divided into a plurality of drying chambers and the ceiling being provided with openings extending longitudinally of the chambers for the discharge of air from the chambers into the collecting space or chamber between the ceiling and the roof, means for regulating the flow of air through the ceiling openings, an air conduit common to the chambers for supplying air thereto, as set forth.

924,439. Crushing and Pulverizing Mill. Charles A. Dorn, John O. Ludlam, and Charles F. Bonnot, Canton, and Louis C. Bonnot, Louisville, Ohio. Filed November 14, 1907. Serial No. 402,149.

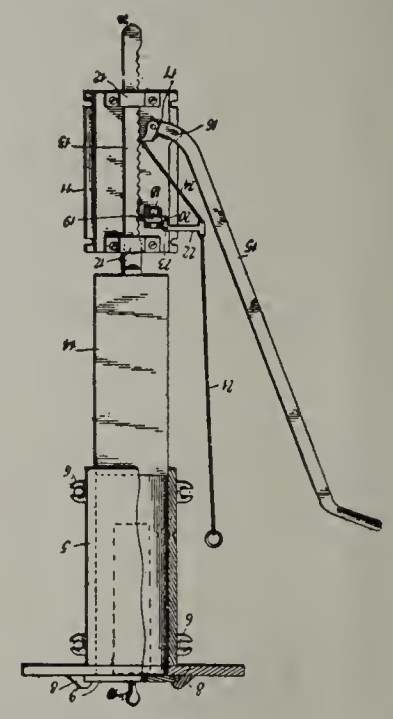
A pulverizing machine having a grinding chamber with a vertically arranged grinding ring or track therein, and a



rotary grinder cooperating with the track or ring and arranged to throw the pulverized or partially pulverized material upwardly past the ring or track, in combination with a screening chamber having screening walls arranged about a vertical axis and located above the grinding chamber, and a rotary distributing device in the screening chamber arranged to deflect outwardly against the screen walls of said chamber the material which is projected upwardly by the grinder; substantially as described.

924,450. Tile-Machine. Howard H. Gibson, Sterling, Mich. Filed February 28, 1908. Serial No. 418,267.

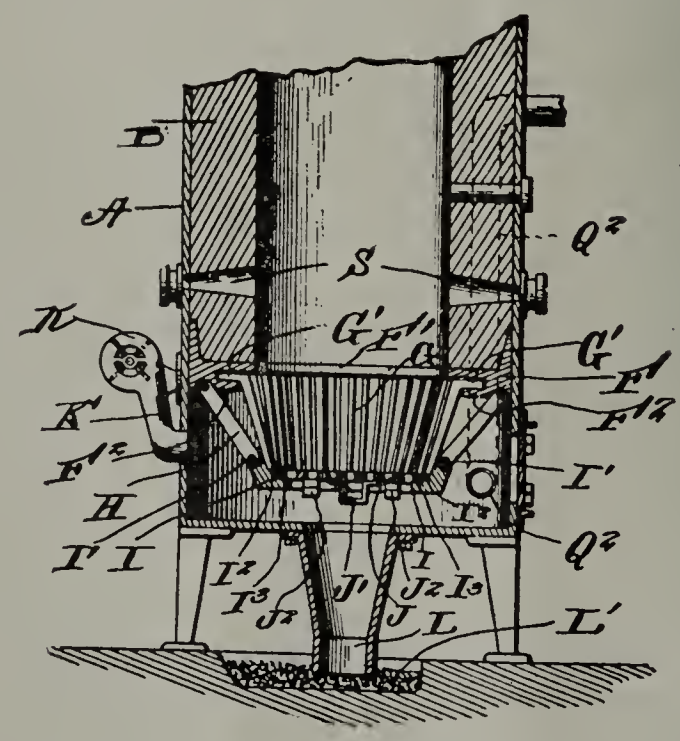
A machine for forming and pressing cement tile, comprising a stationary mold box having open ends, a displaceable imperforate cover for one of said ends, a plate, a lever pivoted thereon, a rack bar, a plunger provided at one end of said rack bar and movable in said box longitudinally thereof, a spring controlled pawl carried by the lever and normally in engagement with the teeth of said rack bar, a sec-



ond displaceable pawl mounted upon said plate for engagement with the teeth of said rack bar, and flexible means connected to both pawls, whereby the same will be simultaneously released.

924,819. Gas-Producer. Lewis C. Parker and Frederick W. Bussmeyer, St. Louis, Mo. Filed July 2, 1908. Serial No. 441,634.

In combination with the wall of a gas producer, a casting fastened to said wall and provided with a central opening, the marginal edge of which is provided with annular groove, a series of grate bars, the upper ends of which are angled and rest upon the projecting bottom wall



of said groove, a ring having shouldered portions upon the inner marginal edge ehereof, the lower end of said grate bars resting upon one of said shoulders, links pivoted at their upper end in grooves formed upon the under surface of said casting, their lower ends pivoted to said ring above the lower ends of the grate bars, a grate mounted upon said ring and resting upon the lower of said shoulders, as set forth.

PACIFIC COAST NEWS ITEMS.

Rather than witness a recurrence of the disastrous market conditions that prevailed here last fall and winter when there were such large stocks of brick on hand that prices dropped to cost, and in some cases below, several of the large operators are preparing to close their plants for the season several months ahead of time. Usually the plants around the Bay operate until about the first of December, when the rainy season sets in but if they all do so this season it is realized that there will be more stock on hand than the market can absorb. especially since it will be but a short time until the falling off in the demand for material will commence to be noted. Aside from a slight flurry in the prices of common brick that took place a couple of months ago, the market prices have been well maintained this summer and all engaged in the business have done fairly well. The demand has really been better than was anticipated for there has not only been more actual building done than was expected but it is to be noted that a greater proportion of the buildings put up have been of brick that has been the case since the fire. Cement is still rather high priced and is not being as enthusiastically recommended as it was a few months ago. The use of face brick and terra cotta tiling is steadily increasing and at no time has there been an overproduction to be noted in these lines. The plants operated are fewer in number and in strong hands which will not allow either an overproduction or a cutting of rates. It is largely due to the use of fancy brick and terra cotta that San Francisco now has so many beautiful structures for all those that are at all noteworthy in this respect show these materials. Many of the concrete buildings have colored terra cotta trimmings to relieve the plainness of the concrete. Glazed tiling is also very popular and the ease with which it is kept new and fresh looking appeals to many property owners.

One of the most important buildings that have been planned for future construction is the "Examiner" building to be erected on Market and Third streets. This is to be a twenty-three story structure of brick in Mission style with a plentiful use of tiling. The general contract has been let to Mahoney Bros., but the different parts of the work will be sub-let.

That vitrified paving brick will soon come into prominent use for the paving of streets on this section of the Coast is apparent from the plans that are being made by several cities around the Bay for installing a large amount of this work at an early date. Walter C. Howe, Superintendent of Streets for the City of Oakland has just returned from an extended visit to the cities of the Northwest where he made a careful study of the proposition where the paving brick had been tried out extensively and he is very enthusiastic over what he saw. Howe states that of all the cities he visited while away Seattle had by far the best streets and these were largely of vitrified brick. City Engineer Thompson of that city assured him that by laying the brick in a thorough manner there was no doubt in his mind that brick is the best and most economical paving material to be found in the market at the present time. Oakland has already been experimenting with the use of vitified brick for street work and it is expected that the report of Superintendent Howe will result in a large amount of work of a permanent character. Owners of brick plants in this section of the state are commencing to realize that the manufacture of paving brick will be a very important branch of the business in the very near future and are preparing to turn their attention to this branch of the business. Suitable clay beds have been located and the brick now being turned out are said to be equal to any on the market.

The brick pavement laid down the center of the new state wharf at pier 40, San Francisco, has proved somewhat of a disappointment but the fault has been found to be with the manner in which the brick has been laid. It will be repaired by the contractors who have agreed to keep it in repair without charge for five years.

Numerous legal tangles involving the right of a corporation to commit suicide and reincorporate under a new name to escape its debts and retain its assets has cropped up in a recent suit in San Francisco. The Windsor Terra Cotta and Pottery Works several years ago while actually defunct by reason of the revocation of its charter, borrowed from a local bank $13,325, giving as security a trust deed on property in East Oakland. Shortly afterward the Windsor Pottery Works was organized and to this corporation were sold the assets of the old company. T. T. Crittenden was a stockholder in both concerns. When the amount borrowed from the bank was not repaid, the bank, defunct itself by that time, secured permission to foreclose on the property. Crittenden, however, secured a temporary restraining order and is now seeking to have this made permanent.

C. H. McKenney, receiver of the Sutter Creek State Bank, has asked for instructions as to what should be done with 20,000 shares of the capital stock of the California Pressed Brick Company of Niles, Cal., held as collateral security for two promissory notes of the Sunset Contract and Supply Co. An assessment of 5 cents a share has been levied upon the stock, which has a market value of about 30 cents, and the receiver is anxious to get rid of it.

Lodi, Cal., will shortly be in the market for a large amount of sewer pipe, $50,000 worth of municipal bonds having just been sold to pay for sanitary work.

The Houze Brick & Cement Co., which recently purchased the works of the Pressed Brick & Supply Co., near Vallejo, Cal., has found a steady market for its product and is making preparations to materially enlarge the plant at the expenditure of a large sum. Much new machinery will be purchased this winter and next spring the company expects to be operating at full blast.

The Northern Clay Company of Auburn, Wash., is making some very extensive improvements at its factory there and is now adding a third story to the factory building.

T. L. Childers of Hilton, Ore., who has extensive clay deposits at Moscow, Idaho, has just returned home from a visit to the beds with his partner. Plans have been made to develop the property at an early date.

Peter Easle will soon commence the manufacture of drain tile near Medford, Ore., and when this plant is in full operation will commence to manufacture sewer pipe and other clay products.

The Columbia Brick Works of Portland, Ore., have been incorporated with a capital stock of $100,000 by A. and R. Klose, and F. Oldrick.

KILLED IN DAUGHTER'S SIGHT.

Hartford, Conn., Aug. 30.—After suffering agony for hours, William Dennis, president of the Dennis Brick Company of Windsor avenue, Hartford, Conn., in the northern part of this city, died at the Hartford Hospital from injuries received while inspecting the engine of his brick manufacturing plant.

Accompanied by his little daughter, Mr. Dennis was looking over the engine when some projection on the fast revolving flywheel caught his clothing and he was whirled rapidly around and over several connecting shafts. One foot and both of his arms were torn off.

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"I like to read American advertisements. They are themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

The success of any business depends upon the hearty cooperation of the employes.

A leaky roof may be mended, but it is impossible to stop the running of a tattling tongue.

He who is content to take things as he finds them will very soon be unable to find anything to take.

And the way of the transgressor is still harder when he is compelled to convert bowlders into broken stone.

You will find it much better to be like the carpenter, and have a plan and to follow it closely. It beats the hit or miss of getting work done.

A man without ambition had better content himself with learning a trade. A good mechanic is fairly sure of three dollars a day and fifty-two weeks employment a year.

Employes should remember that the most successful institution is the one whose managers are developed from the rank and file. The best houses do not hire high classed help from another concern. The most successful men are those who start in at the bottom of the ladder, and by perseverence and pluck and aptitude they climbed the ladder until they reached the top.

FIRE "LESSON" FOR NEW YORK

In the Reconstruction of the Parker Building, Which Was Burned Last Year.

New York, Sept. 11.—Before the twelve-story Parker Building caught fire last year it had been called "fireproof." But the fire "gutted" it completely, killing three men and destroying hundreds of thousands of dollars worth of property—principally because the open elevator shafts and stairways allowed the flames to spread from one floor to another, and because not enough fireproof material had been used to protect the columns.

Most of the metal frame was left in good condition, however, and now the reconstruction is begun. The architect and builder have set out to teach New York a lesson in fireproofing. With the experience of the fire behind them, they are going to show what a really fireproof building is.

For the floor arches the architect has specified 12-inch hollow terra cotta blocks, of the kind used in the city's most modern "sky-scrapers." In the process of manufacture these blocks have been subjected to a heat of 2,000 degrees and are proof against the hottest fire. They are to be laid so that they will cover the bottom surfaces of beams and girders, protecting the metal members by two inches of fireproof material.

In place of insufficient column-covering in the old Parker Building, the columns in the new will have as protection a three-inch thickness of hard-burned terra cotta joined together by Portland cement mortar. This covering will insulate the metal from the fiercest heat capable of being generated in the building.

The elevator shafts and stairways are to be enclosed in such a manner that, if a fire starts, it will not be able to spread from one floor to another, but will be confined to the level of its origin. In every other detail, the architect and builder have planned to make the new structure absolutely fireproof.

THE LARGEST BRICK PLANT IN THE WORLD

The C. W. Raymond Company of Dayton, O., are happy over a contract for the erection and equipment of what will eventually be the largest brick plant in the world, although the present unit to be installed is only about one-third of the proposed plant. The plant will be financed by a syndicate of bankers of New York, who own several thousand acres of coal land, near Nelsonville, Ohio.

The outfit will require a special train of forty cars, it will consist of about 25 different machines together with various auxiliary machinery and equipment, also an artificial dryer of forty tunnels and a continuous burning kiln to be operated by manufactured gas, made from the companies coal.

The machinery will be of strictly modern build, automatic, and of the heaviest type known having a capacity of two hundred thousand brick per day, with the present unit. Two additional units will be installed upon the completion of this one, when the capacity of the plant will have an estimate capacity of six hundred thousand brick.

The order was taken by Mr. Geo. M. Raymond of the C. W. Raymond Company, and will be constructed and equipped under his immediate supervision.

OBITUARY.

William Dennis president of the Dennis Brick Co., Hartford, Conn., died from an accident caused by being caught in a fly wheel of the engine at his brick plant.

John Oloff, a pioneer brick manufacturer of Rock Island, Illinois, died at the St. Anthony Hospital. He was stricken with apoplexy. He was born in Sweden in 1840, and came to Rock Island in 1854. When twenty-one years of age he formed a partnership with Christopher Atkinson which was continued until seven years ago when Mr. Atkinson retired. He is survived by two sisters.

Jacob May, one of the leading German citizens of La-Fayette, Ind., died at the St. Elizabeth Hospital of blood poisoning started in his foot from a small bruise on the little toe. The leg was amputated below the knee in hope of saving him. In 1867 he started in the brick business and at the time of his death had his four sons engaged with him under the firm name of Jacob May & Sons. He was born in 1836.

PORTLAND CEMENT PRODUCTION INCREASING WHILE NATURAL CEMENT DECREASES.

A bulletin just published by the Geological Survey relative to the cement industry in the United States during 1908 states:

The total quantity of Portland, natural and puzzolan cements produced last year was 52,910,925 barrels, valued at $44,477,653. As compared with 1907, whose production was 52,230,342 barrels, valued at $55,903,851, the year showed an increase of 1.3 per cent in quantity and a decrease of 20 per cent in value. The total Portland-cement production was 51,072,612 barrels, valued at $43,-547,679. This is an increase in quantity of 4.6 per cent and a decrease in value of 19.3 per cent compared with the figures for 1907. Pennsylvania, with 22 producing plants. led with 20,393,965 barrels. The average price per barrell was 85 cents. Of the four types of Portland cement, divided according to the kinds of raw material used, 40.6 per cent was made from cement rock and pure limestone, 45 per cent from limestone and clay or shale, 5.5 per cent from marl and clay, and 8.9 per cent from slag and limestone.

The production of Portland cement has shown an increase each year. The natural-cement industry, on the other hand, reached its maximum in 1899, with an output of 9,868,179 barrels, since which year it has shown an almost continuous decrease, until now it has become a relatively unimportant factor in the cement situation. The natural cement produced in the United States in 1908 amounted to 1,686,862 barrels, valued at $834,509, which was a decrease of 41 per cent in quantity and 43 per cent in value under the preceding year. Of puzzolan cement, made by mixing blast-furnace slag and slaked lime, there was manufactured 151,451 barrels, valued at $95,468, a heavy decrease when compared with the production reported for 1907.

Imports of foreign cement (comprising not only Portland but all other hydraulic cements) amounted to 842,-121 barrels, with exports of 846,528 barrels. Shipments to the Canal Zone for use in the Panama Canal will heavily increase the exports of cement from the United States.

The extensive and complete plant, fixtures, material, etc., of the Northeastern Terra Cotta Co., of Bradford, Pa., has been sold to William Hanley on a bid of $14,025. He is also the principal owner of the Bradford Pressed Brick Co.

ACCIDENTS, DAMAGES AND LOSSES.

H. F. Plummer has been appointed receiver for the Wheeland Brick Co., Mountain View, Cali., at the request of the president of the Bank of Mountain View.

Lewis A. Knight has sued the Hydraulic Press Brick Co., of Washington, D. C., for $10,000 damages for being knocked from his bicycle by a team belonging to the company. He was seriously injured.

Joseph Feedrico, foreman of a blasting gang, was killed and two laborers seriously injured in a cave in at the shale quarry of the Bradford (Pa.) Pressed Brick Co., at Lewis Run.

G. A. N. Thone, a stockholder of the American Clay Products Co., of Swoyerville, Pa., filed an equity suit against the company and asks for the appointment of a receiver and that the company may be declared insolvent.

Suilt for $5,000 damages for the loss of fingers of a boy whose boy friend appropriated dynamite cartridges from the plant of the Alliance (O.) Clay Products Co. has been filed.

William Pollock, a brick layer employed at the works of the Enameled Brick Works at Mount Savage, Md., fell from a scaffold and sustained four broken ribs, a broken arm and several severe cuts.

Michael Prince, of Bound Brook, N. J., a laborer employed at the Lincoln Tile Works received fatal injuries. While handling large cement piers one toppled over on him, crushing his chest and legs so that he died on the way to the hospital.

The Frisco Road was fined $100.00 and costs for contempt by the corporation commission of Oklahoma on complaint of the Bartlesville (Okla.) Vitrified Brick Co., for charging excessive rates on a car load of brick from Bartlesville to Avard.

An involuntary petition in bankruptcy has been filed in the courts against the Claytonia Brick & Clay Products Co., South Kentucky Ave. and I. C. Ry., Evansville, Ind. It is claimed that the indebtedness is not large and that the defendant company made a preference of creditors. George M. Uhl is one of the petitioners.

FIRE ! FIRE ! ! FIRE ! ! !

The Terra Cotta Works at Alfred, N. Y., is practically destroyed. Origin unknown. Loss $50,000. Insurance $35,000.

The Steelton and Harrisburg (Pa.) Brick Co.'s plant at Ninth and Reilly Streets, Harrisburg, is a total wreck from fire. The loss is $20,000, partly covered by insurance.

Fire occurred in the kiln sheds of the brick making plant of Whittet Brothers at Edgerton, Wis., destroying the sheds only. The loss will reach $1,000, partly covered by insurance.

The brick yard owned by William Fox, 1010 North Elizabeth Street, Peoria, Ill., was twice visited by fire within a week, supposed to be of incendiary origin. The first loss amounts to $1,500, while the later one totally destroyed the plant, causing a loss of $10,000. The loss is partly covered by insurance.

Fire originating in the dryer at the plant of the Harris Brick Company at Zanesville, Ohio, caused a loss of $50,-000, partly covered by insurance. The plant was leased only a month ago by R. E. Weaver and A. M. Backer, of Akron, O. The lessees loose $5,000 in manufactured stock and new equipment. The plant was principally owned by Mr. Tiedeman, the president, and a New York soap manufacturer and Peter Gorter, of Evansville, Ind. It is not yet decided whether or not the plant will be rebuilt.

DIFFERENCE IN DIRECTORATE RESPONSIBLE FOR DISSOLUTION OF COMPANY.

The order which Attorney C. L. Waring secured from Supreme Court Justice Tompkins directing the receivers for the Bartlett Brick Company to dispose of the property brings to light an interesting story.

The Bartlett Brick Co., was organized about three years ago with a capitalization of $300,000. F. W. Bartlett, formerly of Hudson, N. Y., had about fifty per cent of the stock and other members of the Bartlett family held blocks of stock. Senator John B. Rose held the second largest block of stock and was an important factor in the affairs of the company. The other heavy stockholders were Dr. Charles T. Townsend of this city and Denton Fowler of Haverstraw. Mr. Bartlett was president, and there were eight directors.

Some time after the organization of the company differences arose among the stockholders as to the management of the company and two factions arose. One was known as the Bartlett faction and the other as the Rose faction. Of the eight directors each side had four and a deadlock followed. Being unable to agree it was decided that the best thing to do was to dissolve the concern and proceedings to this end were begun. Edward J. Collins, an attorney and Seward U. Round, of Newburgh, were named by the Supreme Court as receivers of the Bartlett Brick Company. After the receivers had gone as far as they could in winding up the affairs of the company other action was necessary to complete the work, and C. L. Waring the attorney for the Bartlett faction appeared before Justice Tompkins and asked that the receivers be empowered to dispose of the property and turn it into cash so that a distribution of the proceeds might be made among the stockholders according to the number of shares of stock they held.

The Bartlett Brick Company was never financially embarrassed but its dissolution came about owing to differences among the directors over the management. In fact, the company was always a good money maker. The first plant of the company was built at Hudson, N. Y., and is still in a flourishing condition. Then the company enlarged and built a new and modern plant at a point just above Roseton. This plant is the best of the two and is equipped in every way with the very latest appliances and machinery. It has a large output and is capable of earning a large income.

It has been arranged that receivers Collins and Round shall sell the two plants of the company at public sale in October. If the bidders at this sale do not offer anywhere near what the property is worth their bids will be rejected and another sale held. By argeement between the two factions a sacrifice of the property will be prevented.

POTTERS SIGN FOR TWO YEARS' PEACE.

Trenton operative potters are generally pleased because of signing of the new two years' wage agreement at East Liverpool, where representatives of the N. B. O. P. and the United States Potters' Association met in conference. The new wage scale will become effective October 1, when the present agreement expires.

The new agreement makes no changes in the wages as compared with present wage conditions. The men presented 39 propositions to the manufacturers. Many of those propositions giving the men better working conditions were adopted and several calling for minor changes in shop system were gained.

The signing of the new agreement means that for the ensuing two years the pottery industry will be free from labor trouble, providing, of course, that both men and manufacturers honor the new conditions.

SUED FOR $5,000 FOR THE MANGLING OF A HAND BY THE EXPLOSION OF A STOLEN DYNAMITE CAP.

Suit for $5,000 damages against the Alliance Clay Product Company was brought in the courts of Mahoning county by William H. Mitchell of Alliance, O., by his next friend, Mrs. Sarah J. Mitchell. Plaintiff is a lad of twelve years, and the mangling of a hand by the explosion of a dynamite cartridge on July 2, 1907, is the basis of action, negligence on the part of the defendant company contributing, it is alleged, to the accident.

The petition avers that the defendant company, which is engaged in the mining of clay and shale and the manufacture of brick, had on or about June 24, 1907, the time leading up to the accident, a poorly constructed shed by the roadside in which was kept quantities of explosives dangerous to life and limb, the same being without fence, guard or obstruction to keep passers-by off or out of the property, with no sign or danger warning and with door usually unlocked and open. That it was known by the defendant company that the public highway thereby was generally used by the public and that children frequently traveled by, either in the going to fish or swim in Plum Run creek or to gather berries by the wayside.

That on or about the day above mentioned the door of this shed had been negligently left open with the explosives unguardedly exposed; that plaintiff, then 10 years of age, with Mike Grall, aged 10, and Chas. Grall, aged 12, in returning home from a fishing trip on said day, were attracted by childlike instinct to the shed, and that some of the dynamite cartridges were picked up by Chas. Grall, who gave of them to his companions, the same being carried home.

That on July 2, following, while plaintiff was handling one of these cartridges, it exploded, mangling the left hand and tearing off the thumb and index finger, by reason of which he was confined to his bed for six weeks, surgical attention being necessary, and through which he will be deprived of the most important of the fingers of the hand and be disfigured for life.

A TENNESSEE CONTRATOR WILL REVOLUTIONIZE BRICK MAKING.

Dresden, Tenn.—Mr. Charley Pratt, a local contractor and practical brick mason, has in operation here a brick-making machine that is destined to revolutionize the manufacture of pressed brick and make Mr. Pratt, the inventor, wealthy. The machine has just been placed on the market and is proving a success. It makes hard pressed brick from plain dry dirt, no water being used in mixing. The dirt is hauled from the pit and fed into the machine without any doctoring at all or the addition of sand. This dirt is ground to a dust and conveyed to the molds, where, by hydraulic pressure the brick are formed. These brick are firm and weigh one-half pound each more than the mud-made brick; they are free from pores, which are common in the mud-made brick, and Mr. Pratt claims that no water will be absorbed by them after being placed in the wall. The brick are taken direct from the machine to the kiln, 100 at a load, whereas with the old machine fine brick can only be handled one at a time, and these are conveyed to a drying shed, where they remain several days before being placed in the kiln. The inventor, Mr. Pratt, claims that three hands can manufacture with his machine the same quantity of brick per day that is required for ten hands with old machine. Many brick men from a distance have been here to examine the machine and see and test its product. Only one other of this invention is in use, there being one at Hickman. The machine is light and may be conveyed from place to place at little expense.

EVERY TRENTON GENERAL WARE POTTERY WORKING TO ITS LIMIT.

In addition to the business activity reported in the sanitary potteries of Trenton a few days ago, it is now known that for the first time in three years every general ware pottery in Trenton is working full force and with prospects of business for months ahead. The local plants are busier now than they have been for a dozen years.

A few months ago nearly every general ware plant in the city was working with the lowest number of employes in their history. Then as soon as the manufacturers realized that the tariff would not adversely affect the local industry and also that the National Brotherhood of Operative Potters would not make any unreasonable demands conditions improved. With the wage and the tariff questions out of the way for at least a couple of years, the manufacturers started to plan for increased trade. Traveling salesmen were hustled out to the various sections of the country and business began to boom. Orders began to come in from every quarter and this week every pottery found it necessary to run full-handed. This means that several thousand Trenton people are being given steady employment and the business men and house owners of the city are being benefited.

The plants of Charles Howell Cook are working full-handed and the amount of orders on hand insures steady work for months.

Ambrose G. Dale, of the International Pottery Company, who is one of the best posted men on general ware, in an interview declared that the prospects for the general ware trade looked better than for years.

The Maddock Pottery Company on Third Street is a bee-hive of industry as a result of the improvement in trade. The plant is turning out hotel and restaurant ware to its fullest capacity. Orders are coming from every quarter.

The Greenwood Pottery Company has three big plants making general ware. In the china plant the condition of trade for high grade of goods is fine and in the other plants the entire force is at work.

W. H. Griggs, of the Anchor Pottery Company, declared that the settling of the tariff and wage questions will man work to the limit. The plant has been running full-handed for several weeks.

JUDGMENT NOT GIVEN; DEFENSE IS SUFFICIENT.

The court discharged the rule for judgment for want of a sufficient affidavit of defense in the case of the U. S. Brick Co., Reading, Pa., to the use of the receiver, against the Middletown (Pa.) Shale Brick Co. A similar disposition was made and the same order entered in the case of the U. S. Brick Co., etc., against the Reading Shale Brick Company. Judge Endlich handed the opinion down in both cases.

After a careful review in the questions involved in this case Judge Endlich states "the conclusion which is forced upon the court, though, it may be confessed, not without a feeling that the contrary is supported by many obvious considerations of fairness and expediency, is that the affidavit of defense filed in this case is, under our law as it now stands, sufficient to prevent the entry of judgment for the plaintiff upon this rule."

This is an action to recover a balance of $11,419.19, which it is alleged the Middletown Shale Brick Co., owes the plaintiff corporation, which became insolvent on July 1, 1907, and a receiver was appointed on July 27, 1908. The defendant claims that instead of being indebted to the U. S. Brick Company the later is indebted to them to the extent of $21,791.93.

THE ZANESVILLE TILE PLANT BOUGHT BY THE MOSAIC TILE CO.

Spirited bidding on the part of three prospective buyers at the sale of the Zanesville Tile Co.'s plant forced the price up to $68,600, when it was knocked down to William M. Shinnick, treasurer and general manager of the Mosaic Tile Co., his representative at the sale being Attorney J. R. Stonesipher. It is stated that the Mosaic will in all probability operate the plant in connection with its own industry. The other bidders were J. B. Owens, former owner of the manufactory, and J. C. Flammer of New York, head of the National Association of Tile Manufacturers, who is said to have represented the American Encaustic Tile Co.

The sale price was $7,000 more than the appraisement, which was $61,931. The first bid of $42,000 was made by Mr. Flammer, two-thirds of the appraisement being $41,287.32. He and Mr. Owens had a merry race, bidding in thousands until the $50,000 mark was reached, after which Mr. Flammer dropped out. Then Mr. Stonesipher, representing the Mosaic, entered the bidding and it proceeded by one hundreds and several five hundred bids until Master Commissioner L. E. Dodd knocked it down to Mr. Stonesipher for $68,600.

The sale was held at the front door of the court house and the high sale price is a surprise to many. It was forecasted the day before that the plant would not sell at the present appraisement, but all these opinions were in error.

The sale is the result of a court order, given Master Commissioner Dodd by Judge Frazier, in the case of Harry L. Mooar vs. the Zanesville Tile Co., in which Mr. Mooar asked for a receiver. Mr. Dodd was appointed receiver, and after some time the court allowed Mr. Dodd to lease the plant to Mr. Owens, who has been conducting it for some months. Mr. Owens holds about 90 per cent of the claims against the concern.

WORKHOUSE BRICK TO BE SOLD ON LOCAL MARKET.

The Minneapolis workhouse brick problem will be settled by the sale of that product in the open market to the highest bidder.

At a meeting of the special council committee which considered the brick question, this course met with approval but final action rests with the board of charities and corrections.

Mayor James C. Hayens, Frank McDonald, superintendent of the workhouse; Fred R. Salisbury and J. D. Holtzerman, members of the board of charities and corrections, urged that the city find a use for the brick.

"The question is," declared Mayor Haynes, "whether the city has a right to use its own property as it sees fit. There seems to be some strange influence operating to prevent the use of these brick. The building trades have approved but the hatters' union and others with no particular interest in the matter have voted against it."

Andrew Rinker, city engineer, explained that the only place these brick would be available would be for sewer work. He said that about 60 per cent. of them would be available for this purpose, but as the brick for the sewer construction ordered for this year has already been purchased nothing can be done in this matter until next spring.

Although the speakers advocating the use of the brick by the city presented many arguments in favor of such use they could not suggest a place where the 3,000,000 brick now on hand would be available.

"There is no question as to the advisability of using this brick," declared Ald. James D. Williams, chairman. "What we want to find out is where to use it."

OUTPUT OF THE YARDS ALONG THE HUDSON RIVER.

The greater part of the brick used in construction work in and about New York is made along the Hudson River, where shipping facilities are excellent. The report of the State Geological Survey says the value of the brick made last year was only $4.75 a thousand, as compared with $5.20 a thousand in 1907. The total number of common brick marketed from the Hudson River region in 1908 was 817,459,000, as compared with 1,051,907,000 in 1907. The largest production was in 1906, when it amounted to 1,230,692,000, or about 50 per cent, more than that of 1908. There were 114 plants in operation last year, with an average product of 7,171,000 against a total of 122 plants and an average product of 8,622,000 in 1907.

The decline in the production was generally distributed over the nine counties of the region, and all reported a smaller total than in 1907, though the largest falling off was in Rockland and Ulster Counties. Ulster County stood first in size of output, as in the preceding year, with a total of 179,166,000, valued at $816,947. Rockland County maintained its place as the second largest producer in the region and reported a total of 172,926,000 valued at $800,603. Orange County's total was 151,860,000, valued at $747,637. Dutchess came next with 132,000,000 brick, valued at $605,371.

On the whole, business last year was poorer than for a long time, with prices throughout at so low a level as to afford little or no profit to the manufacturer. An unfavorable factor was the large number of brick carried over by the yards from 1907, amounting to fully 300,000,000. The season of manufacture was very short. The prevailing prices in the early part of the year averaged about $4.50 a thousand. As the season advanced there was a gradual improvement, and shipments were made at $4.75 and $5.00 in the summer. The upward tendency continued throughout the fall and early winter with the revival of building operations, and at the close of the year prices reached as high as $6.75 and $7.00.

NEW BIG TILE PLANT FOR ZANESVILLE.

Zanesville, Ohio, which is to have a new pottery and tile manufactory without paying one cent of bonus or donating a site, and the concern will be one of the largest in the city, for J. B. Owens, Zanesville's former tile and pottery manufacturer, has let the contract to Dunzweiler Bros., for erecting the first of a series of buildings. Mr. Owens announced that 200 men would be employed within 60 days, 300 in three months, and in four months when everything would be in shipshape order, he expects to employ at least 400.

The prospective cost of the new plant has not been announced, but it will run up to an enormous figure eventually, as Mr. Owens intends adding to the original building. The plant will be modern in every respect, and will be one of the largest in the city, and as the cost of big tiling industries run into the hundreds of thousands of dollars, it will be seen that the affair is one of magnitude.

The new plant will be located just opposite the Zanesville Tile Co. as Mr. Owens owns 65 acres of ground in that vicinity, enough for the biggest pottery in the world, if the new concern should enlarge to that point. The first building, where the goods will be manufactured, will front 160 feet on the railroad, while the warehouses and stock rooms will be near this.

The first main building will be 160 feet wide and 350 feet long, and will be constructed of brick. The plans call for its completion in 60 days, and Mr. Owens stated that the contractors must also finish a kiln every four days, after the first two weeks, so more workmen can be added every week.

HOUSTON'S NEW BRICK PLANT NOW IN OPERATION.

The first of September was the first day of the operation of the new brick plant that has been erected by Sherman Brady, at Houston, Texas. The new factory is located in the Second ward near the Hill street bridge with only a street between the new site and that of the old factory. The new factory is virtually an addition to the already established concern and was built to meet the demands of the growing business of the concern. Preparations and work have been going on at the new plant for about seven months and while the plant is now in condition to run regularly, there will be a great deal more improvement made before it is entirely completed.

The old factory owned by Mr. Brady is the oldest brick making establishment in Texas and one of the oldest in the South, and has been continually in operation for many years. The new plant will add greatly to the capacity of the plant for turning out brick.

There were three presses in operation at the new plant and one stiff mud machine. About 100,000 brick have been turned out since the start was made. Sheds will be built over the entire brick yards and the factory will be equippel with necessary conveniences for running both day and night and in any kind of weather. Including both shifts of men, about fifty men will be employed at the plant.

The clay out of which the brick will be made is brought from Harrisburg up the ship channel by barge. Mr. Brady is having slips put in at Harrisburg and will also construct slips at the yards where the clay will be unloaded from the barges. Mr. Brady is proprietor of the barges and transportation facilities and has everything arranged to conduct the business on the most economical plans. The clay is tranferred from the barges by a new 50-horse power derrick of the American Hoist and Derrick Company, which will be used also to transfer sand and shell from barges. The clay is of a very fine quality of a red color and makes a handsome brick. It is pressed dry and can be made into brick a few minutes after it leaves the barge. The Harrisburg clay will be used at both plants for the making of the brick.

The International and Great Northern railroad has just laid 2,400 feet of new track into the yards, which makes the shipping facilities of the plant unexcelled, having the best of both water and rail transportation facilities.

A large supply of wood and oil has been procured and the plant is in a position to continue in operation without delay. Mr. Brady has acquired about 200 lots in the vicinity of the plant and will be prepared to continue the development of his property. Five new kilns will be built, which will have a capacity of 435,000 brick each.

MR. GREGORY GIVES FOUNTAINS TO CITY

M. E. Gregory, proprietor of the Corning, (N. Y.) Brick and Terra Cotta Co. plant, and a public spirited man, has presented six large terra cotta flower vases to the city of Corning for decorating the large fountain now being built in the Court House Park.

A vase will be placed on each side of the six pillars, and will contain flowering plants. The fountain is now being constructed, the forms having been placed for the concrete and one pillar completed. The outer edge of the fountain will form a huge circular seat. The water will fall from the center of the fountain where the electric light standard is located over rough stones creating a cascade effect.

Mr. Gregory is the ex-president of the National Brick Manufacturers' Association and a member of the Executive Committee. He has always been interested in bringing to the front anything pertaining to the ceramic industry.

SAND OR LIME BRICK OR BLOCK NEWS.

A report has been received from an American consular officer in the United Kingdom stating a business man in his district is desirous of seeing American bricks made of sand (sand with a mixture of lime or cement). He also desires to be supplied with illustrated lists of up-to-date machinery used in the United States in the production of these bricks, together with the approximate cost thereof, as he is contemplating engaging in the manufacture of bricks, sewer pipes, sanitary ware, etc. Address No. 3858, Bureau of Manufactures, Washington, D. C.

After a thorough investigation the Monterey, (Cali.) Pressed Brick Co. has decided to erect a plant for the manufacture of building brick from the sands of the American river. The plant will be at Sacramento on the water front. Tests were made at their Monterey plant which are very satisfactory.

The Raton (New Mexico), Cement Block & Brick Mfg. Co., is now delivering its first 200,000 brick.

The Wainwright Adamant Brick Co., Wainwright, Okla., has been incorporated with $30,000 capital stock. Incorporators are, D. A. Skillen, L. W. Hampton and L. R. Skillen, of Okmulgee and W. H. Wainwright and C. L. Hunt of Wainwright.

The Fairmont Cement Stone Mfg. Co., Fairmont, Minn., is putting up a large cement tile factory at Tuttle Lake. They will make tile from 12 to 40 inches in size and two feet long.

The Montana Granite Brick Co., Helena, Mont., is making a permanent exhibit for the Montana State Fair.

Pure silica sand has been found on Gordon Creek, near Elgin, Union Co., Oregon. J. W. Robinson has become interested and has a process by which fire-proof, facing and ornamental brick are made. Plass Bros., of Elgin, are preparing to erect a plant using the silica and process.

The new address of Paul Fuchs, the specialist for the sand-lime brick industry, is 1747 Carmen Ave., Chicago. It is not a change of location, simply a renumbering of the streets. Mr. Fuchs has a splenid laboratory, where all kinds of tests can be made.

The International Sand Lime Brick and Machinery Co., 90 West Street, New York, reports that business is much improved. Their "Division Method" of making silica brick is meeting with great favor. The Philadelphia Opera House, owned by Oscar Hammerstein, is a lasting monument for this method.

BRIMFIELD BRICKMAKERS PROTEST FOR LOSS OF WATER POWER.

Marcy & Gardner, makers of brick in Brimfield, Mass., filed a bill of complaint in the superior court against Augusta R. Schnell of Warren, asking for damages and that the defendant be restrained from continuing to remove the bank and divide the waters of "Mill brook." The plaintiff have a dam and mill situated in the westerly part of Brimfield along Mill brook and for years have been using the water in the brook for the manufacture of brick.

In the bill of complaint it is claimed that the defendant owns land along the brook above the property of the plaintiff and that the defendant has taken away a portion of the bank and divided the waters in the brook, so that the plaintiff's business has been damaged by the curtailing of the output of brick.

MISCELLANEOUS ITEMS.

The Mosaic Tile Co., Zanesville, O., has purchased the Zanesville Tile Co. plant paying $68,600 for same.

The Sioux City (Ia.) Brick and Tile Co., are now delivering brick to the trade from its rebuilt plant at Springdale.

The Manteno (Ill.) Brick Co., recently broke all previous records by making 210,000 brick in eight hours on one Chambers Bros. Co., brick machine.

The Beebe (Ark.) Brick Mfg. Co., has filed a certificate with the state increasing its capital stock from $5,000 to $50,000. W. H. Strickland is president of the company.

J. B. Owens has let contracts to Dunzweiller Bros., to build a tile and pottery factory, the main building to be 160 feet wide by 350 feet long, and will employ 400 workers. It will be known as the Owens' Tile Works.

The Montello Brick Co., Reading, Pa., has opened the first kiln of brick at the Perkiomen plant and will put a force of men at work on the Mantello plant so as to put it in shape to start. L. A. Rehr is the general manager.

A. E. Huckins has purchased of John W. Stipes a half interest in the Sheldon Brick Co. plant at Urbana, Ill. He will make his home in Champaign where the office of the company is located.

The Hayes Run Fire Brick Co., at Hayes Run, near Lock Haven, Pa., has decided to rebuild its works which recently burned. This time the plant will be built of brick and stone instead of wood.

Holley & Smith have been incorporated at Hackensack, N. J., with $125,000 capital stock. Alfred T. Holley, Walter H. Smith and Arch. C. Hart are the incorporators. They will manufacture and sell lumber, brick and building material with offices on State Street.

The Evansdale Lime and Clay Product Co., organized by Canton, O., residents with a $20,000 capital stock has begun operations near North Industry. The office is in the City National Bank Bldg. Milton Shaefer is president and Otto Benra, manager.

The Empire Brick and Sand Co., Jersey City, N. J., has been incorporated with $50,000 capital stock. Incorporators are John S. Crump of Bayside, L. I., and Charles H. Stanton and F. H. Pfeiffer of New York City. They will manufacture brick, tile, pottery or terra cotta.

After the Ft. Smith (Ark.) Vitrified Brick Co., had spent nearly $100,000 building a splendid plant near that city the St. Louis & Francisco Ry., took up the switch track and the company is now obliged to cart their brick to a railway track until the matter can be settled in the courts. The plant was built and owned by A. J. Yoke and others.

Haigh's New System of Continuous Kiln Arranged to Suit all Locations

These Kilns can be seen burning Roofing Tile, Drain Tile, Dry Pressed Facing, Fire, Paving and Common Building Brick

Points of Superiority: Cheapness in construction. Easy to understaud and operate. Perfectly free from any nuisance. Will save more than one-half of the fuel used on other Kilns. Specially adapted for Utilizing Waste Heat for Drying Purposes, and which is being done most successfully

Address, H. HAIGH, Catskill, N. Y.

The Batchelor Brick and Tile Co., is building another kiln to their plant at Angola, Ind.

C. M. Baldridge has sold his brick and tile works and will move to North Dakota.

The Quanah (Tex.) Chamber of Commerce wants estimates on the cost of a brick making plant.

A brick plant to cost $100,000 will be located at Sapulpa, Okla. A. Kentner is now in charge of the work.

The South Webster (O.) Clay Products Co., increased its capital stock from $100,000 to $1,000,000. W. E. Tripp is president, and E. B. Blair, secretary and treasurer.

The Washington Brick, Lime and Mfg. Co., Spokane, Wash., will resume operations with 250 men at their lime works at Sprindale.

The new plant of Sherman Brady, near the Hill Street Bridge at Houston, Texas, is now in operation. Five new kilns will be built with a capacity of 435,000 brick.

The Low Art Tile Works on Broadway, Chelsea, Mass., has been sold to Samuel Freudenberg of Boston, and he will tear down some of the buildings and erect apartments.

The contract for the construction of four large kilns at the Bloomfield (Ind.) Vitrified Brick and Tile Co. plant has been let to Charles E. Watts of Brazil. Other improvements will be made to the plant.

Dutton Realty and Construction Co., New York, has been incorporated with $50,000 capital stock. Object, to deal in brick and building material. Incorporators are V. M. Dutton, T. H. Roxbury, G. S. de Heirapoles, all of New York City.

A charter has been issued to the West Virginia Clay Products Co., of Charleston, W. Va. The works will be near Charleston. The capital stock is $200,000. The incorporators are W. E. Caldwell, Walter E. Caldwell, J. W. Jenkins, R. H. Yates and A. H. Robinson of Louisville, Ky., and J. H. Highbaugh of Sonoro, Ky.

The Southern Fire Brick and Clay Co., Montezuma, Ind., has shipping instructions for fifteen car loads daily but shortage of cars proves a serious problem.

The Kenilworth (Ohio) Brick Works which have been idle since May for want of orders has resumed operations for the balance of the year. The plant is owned by Porter Bros.

The United Brick Co., Conneaut, O., has closed a contract for 2,000,000 paving brick for the city of Erie, Pa.

The Melvin (O.) Brick and Tile Co., is now under full working head and will soon have a stock of brick and tile for the market.

The American Encaustic Tiling Co., Zanesville, O., are building an addition to their plant 87x160 feet, and will build four additional kilns.

The New Jersey Brick Co., 54 Wall St., New York, has been incorporated with $2,000 capital stock. Incorporators are are John G. Hogan, Harry C. Belmore, and Frank H. Parcells, all of the above address.

The demands for their brick have caused the Weston (Oregon) Brick Works to put on an extra crew to be able to meet the present demands and the early spring trade.

Herman Suer, Station H, Cincinnati, O., has purchased thirty-two acres of land in Rossmoyne. O., on which to start a brick yard. He will handle his product by rail instead of wagon delivery.

The United Clay Companys, New York, has been incorporated with $25,000 capital stock. Incorporators are C. A. Wilkins, 20 Broad St., H. Jaquary, 116 Nassau St., and A. G. Duyster of 158 Broadway, New York City.

The Cimarron (N. Mex.) Brick and Tile Co., are planning to put stock on the market and to install a modern dry press brick plant using the shale recently discovered.

The Lanius Brick Co., Abilene, Texas, is now turning out the first brick at their plant which was completed a short time ago. They have 42 acres of shale 200 feet in depth.

NOTICE

The Trade Mark

TAPESTRY

is registered in the U. S. Patent Office and is our exclusive property It brands our best burned clay products. All manufacturers and dealers, except those selling our goods, are warned against infringement.

Boston **FISKE & CO., Inc.,** New York

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BANK SAND
GLASS SAND
ROCK, CLAY
COAL, ETC.

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue W. C.

American Process Co.,
68 William St. **NEW YORK CITY**

The Jeanette (Pa.) Brick and Stone Company has been incorporated with $5,000 capital stock.

A. F. Feumer, of St. Cloud, Minn., will start a large brick yard at Royalton.

S. M. Baugh, Etowah, Tenn., has installed on complete new outfit in his brick yard.

The Ft. Smith (Ark.) Vitrified Brick Co., will build sixteen down-draft kilns as soon as the brick can be made for them.

The Diamond Coal and Clay Co., Wellsville, O., has been incorporated with $10,000 capital stock by W. E. Smith and others.

The Harris Kaolin Co., has been incorporated at Portland, Maine, with $1,000,000 capital stock. C. E. Eaton is president and C. G. Trott, treasurer.

The Plymouth Clay Products Co., Ft. Dodge, Ia., made a very creditable exhibit at the State Fair held at Des Moines, Iowa.

The new brick company at Leavenworth, Kansas, is behind with their orders. Leavenworth can use three times as many brick as they can make.

The brick plant of the United States Coal and Coke Co., located at Oran, McDowell Co., W. Va., which has been idle for eighteen months has resumed operations.

The Brooksville, (Fla.) Brick Company is now turning out 300,000 brick weekly. R. L. Davis is the general manager.

Al. Mathern has bought J. T. Nesbit's interests in the Traer (Ia.) Brick and Tile Works and is now the sole owner. Mr. Nesbit and family will move to Colorado.

Owensboro and Whitesville citizens are organizing a company to build a brick and tile factory at Whitesville, Ky.

Mr. Rustin has accepted the position as assistant manager of the Northern Michigan Brick and Tile Co.'s plant at St. Ignace, Mich.

The Grand Ledge Clay Products Co.'s factory at Grand Ledge, Mich., is unusually busy and the plant is being run to its fullest capacity. One order for 75 carloads of conduits is being filled.

The Standard Brick Co., New York City, has been incorporated in Delaware with $300,000 capital stock. The incorporators are R. K. Stauff, F. F. Wright and G. Q. Dean, 81 Nassau St., New York.

James Brown of Iola, Kansas, recently purchased the machinery of the brick plant at LaHarpe and is locating it at Waverly, Oklahoma, where he is locating a large plant.

The Barry Brick Works at Atchison, Kansas, are to be equipped with electrical power, a 150 horse power will be installed; also a small 15 horse power motor. The change will cost $2,000 to install.

The Menlo Park Tile Works which recently was destroyed by fire was fully covered by insurance and the plant will soon be rebuilt.

Wm. M. Evart, the New England manager of the National Fire Proofing Co., is making arrangements to open up a works at the old brick works on Parker Street, Newburyport, Mass.

Frank Berryman is now in charge of the John T. Hutler brick yards at Denison, Wash.

The head office of the Buff Brick and Mfg. Co., is to be removed from Neodesha to the plant at Altoona, Kansas.

Councilman J. J. Riner has accepted the management of the Star Brick Co.'s works at Nowata, Okla., recently incorporated with $25,000 capital.

Justice Thompkins has signed an order directing that the property of the Bartlett Brick Co., Newburgh, N. Y., be sold and the company closed up.

Captain James Pelham is now the general manager of the Ouachita Coal and Clay Products Co.'s plant at Versailles, Mo. S. W. Tate, resigned.

The Hanrahan Brick and Ice Co., of Kingston, N. Y., has been incorporated with $30,000 capital stock by W. E. Hanrahan of Saugerties and others.

The Ottumwa (Ia.) Brick and Construction Co., at the present time are very busy with large orders for brick, pottery and stoneware.

Korf Brothers, Rosebud, Mo., are burning brick of excellent quality. They recently shipped a large order to Owensville.

The Plymouth Clay Products Co., Ft. Dodge, Ia., will erect an $8,000 clay shed at their plant. 8,000 tons can be stored in it at one time.

Buffaloe & Hewitt, Marion, N. C., have installed a complete brickmaking outfit.

The Nansemond River Brick and Tile Co., Norfolk, Va., have installed an automatic cutting table in their plant and otherwise increased its capacity.

The Lexington (Tex.) Brick and Tile Co., has recently been organized with $7,500 capital and ordered machinery for 20,000 brick per day capacity. Plant is expected to be in operation in October.

The Maryland Clay Products Co., capital stock $250,000 has been incorporated by S. L. Stadelman and R. Barker, Ardmore, Pa., and W. Lyle of Belmont Heights, Marayunk, Pa.

E. F. Wayland & Co., Monadnock Bld., San Francisco, Cali., are offering stock of the California Pressed Brick Co., of Niles, Cali., for sale to investors looking for something good.

The Southern Brick Co., has been incorporated with $15,000 capital stock by T. E. Simmons of Fulton Co., Ga., W. L. Pethel of Ben Hill Co., and William E. Withers.

The Ferris Paving Brick Co., have completed the installing of a 42,000 brick per day capacity brick machine in their Mechanicsville, N. Y., plant, thus doubling the capacity of the plant.

Work will be started at once on the building of a $100,000 brick plant at Pawhuska, Okla. Mr. Tucker of Chanute, Kansas, is at the head of the company which obtained the lease of the shale beds on the Indian Reservation.

The Lake Union Brick Co., has bought a complete brick making plant to manufacture 30,000 brick daily from R. N. Bond, the Northwest agent of the C. W. Raymond Co., of Dayton, O. His office is in the Pioneer Bldg., Seattle, Wash.

FOR SALE

One Penfield power Repress in first-class condition, capacity 10,000 per day, used only one month, write for particulars.

American Enameled Brick & Tile Co.
1 Madison Ave., New York City.

WANTED

One good second hand Housing for Stevenson 9 foot dry pan, 2 pieces. Address,

BOX 52.
Hyndman, Pa.

Second-Hand Brick Machinery For Sale

1 two-mold brick press.
1 three-mold brick press.
1 four-mold brick press.
1 Freise stiff-mud auger machine, pug mill and cutter.
1 dry press mixer.
2 small engines.
Let us know your wants

Scott Manufacturing Company,
1811 Third National Bank Bldg St. Louis, Mo.

Brick Plant for Sale or Lease

A cenveniently located brick plant on the main channel of the James River, 90 miles from Richmond, 18 miles to Newport News, and 40 mile to Norfolk, all having a good steady market for brick. Easy transportation for large boats. Want to see plant in operation. Therefore would make very easy terms. Address MRS. AGNES L. TURNER,
Ferguson's Wharf, James River, Va.

FOR SALE

One No. 9A Brewer Tile Machine with hand Brick and Tile Cutters, Brick Dies and Tile Dies 3½ to 8 in. One 40 horse power Engine.

C. L. FINK,
Bricelyn, Minn.

WANTED

One good copy of the Clay Record, Number 10 Volume 16, to complete files for a ceramic school library. Address ROSS C. PURDY
Ohio State University,
Columbus, Ohio

FOR SALE

Plans and Rights of Round Down-draft Continuous or Semi-Continuous Kilns. Both types possess new and improved features Address
William Radford,
Phoebus, Va.

POSITION WANTED

As general superintendent or general manager of a large brick works--Or the planning and building of a large plant. Twenty years experience with all kinds of clays and shales and all processes from mud to dry process yards. All styles of wood, coal and gas kilns. Understands the business thoroughly from clay pit to office work. Also competent in Sewer pipe and architectural Terra Cotta Manufacture. Address Brick Yard Supt.
Office 56, No. 84 Washington St.
Chicago, Ill.

DRY PRESS FOR SALE

We have for sale one American four mold dry press, as good as new. A bargain if sold at once.
Des Moines Clay Mfg. Co.
Des Moines, Ia

BRICK PLANT FOR SALE

Well known and good market in the city of Minneapolis. Plant is running at present. Will sell equipment and yard including horses. If deal is made quick owner can make brick this fall for spring trade. Address
Minnesota, care Clay Record,
Chicago, Ill.

POSITION WANTED

Sand-lime brick manufacturer, 15 years experience, highest references, wants position as Manager or Superintendent of a sand-lime brick plant. Capable to build a plant, to run it and to make it pay. If you cannot make money now call upon me.
Address "SAND-LIME,"
Care of Clay Record, Chicago, Ill.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

CLAY FOR SALE

Tell us what kind of Clay is wanted; we may have it in our line.

Industrial Commission, Soo Ry.,
Minneapolis, Minn.

A BAGAIN

1 E. M. Freese Automatic Cutter, Cost $600; good as new; will sell for $300.
1 American Clay Working Machinery Co. Clay Crusher, good condition, $ 0 .
1 No. 8 Penfield Auger Brick Machine, capacity 25 000 to 30,000 per day
83 Roller Bearing Iron Dryer Cars, decks 3 ft. by 6 ft 8 in., in good condition, $5.00 each.
This machinery is all in good condition and I am offering it at little above scrap prices.
If interested write,

Jas. F. Du Bois,
Bellaire, Ohio.

WANTED

A practical brick and tile man to take the management of a brick and tile plant and invest some money. No tile plant within 100 miles Cannot supply the demand. Everything up-to-date in machinery, dryers, kilns, etc. Located in Michigan.
Adddress "MICHIGAN" Care of Clay Record,
Chicago, Ill.

FOR SALE

Two second hand American Clay Machinery Co. No 2 Automatic Cutters.
One Western Wheel Scraper Co No. 2 Jaw Crusher.

Hydraulic Press Brick Co.,
Brazil Branch,
Brazil, Ind.

DRYER CARS

We have on hand a lot of second hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, Ohio

FOR SALE

A brick and tile plant in Green County, Iowa. Cannot supply the demand. All new machinery. Good reason for selling. Write for particulars to GREEN, Care of Clay Record
Chicago, Ill

WANTED

Superintendent of Combined Dry Press and Stiff Mud Yard. Capacity about 60,000 Best equipped plant in the south. Want high grade experienced man; married man preferred. Right salary to right man.

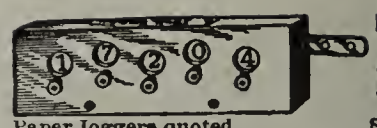
GULF STATE BRICK CO.
Beaumont, Texas.

WANTED

A young or middle aged man, of habits, strictly good, honest and reliable, one who is experienced in the manufacture of clay products and also able to handle correspondence pertaining thereto, and the use of machinery for the manufacture thereof, for position in sales department of reliable machinery manufacturer. In reply to this advertisement state salary that would be expected and give several references as to ability and character. Address.
Sales Dept. Care of Clay Record,
Chicago, Ill.

LOCATION OR PLANT WANTED

I am looking for a location or preferably a plant partially or ready to run for making clay products; such as drain tile builders and pavers, in fact a good shale and fire clay proposition, preferably in Indiana or Illinois, on good road or roads Will buy a managing and sales managing interest or all if conditions are right. Address
"LOCATION" Care of Clay Record,
Chicago, Ill.



No better made, cut from $8 and $10, to
4 Wheel, $3.00
5 Wheel, $3.25
Guaranteed.
Paper Joggers quoted. Sold by all dealers.
R. A. HART, 41 White St., BATTLE CREEK, MICH.

GOOD OPENING FOR CAPITAL AND EXPERIENCE

For the purpose of making enlargements would like to interest capital in clay plant, have dry press and stiff mud outfits, making fire brick, face brick, hollow building tile, fire proofing and common brick. Located in the west and have a great advantage in freight rates over a good market on fire brick, fancy face brick, tile etc. Have immense deposits of high-grade fire clay, several varieties of shale and unlimited quantities of good surface clay. Would prefer to interest parties practical in clay working and will offer good inducements.

A. N. M., Care of Clay Record,
Chicago, Ill.

BRICK YARD FOR SALE

I have a nice little Brick and Tile Plant that supplies a local trade of 500,000 to 800 000 Brick and 100,000 Tile, 7 acres of fine red burning clay. New 6 room dwelling, new 40 H P. Engine, 65 H. P. Boiler, Frost make Frost Dry Pan, Brewer Mill, Automatic cutter, Hoisting drum. Steel track, everything in first-class running condition. No debt. Sheds and Buildings newly roofed. 2 good down draft kilns, Stiff mud pallets for 100,000 brick, premises newly fenced with "American Field." Good pasture and fine for truck, right in town. $12,000 would scarcely replace it. Will take $4,900 cash, $2,000 down, time on rest. Would consider an exchange for small well improved property at its low cash value. If this looks right to you come and see it, no time to fool away in correspondence.

C. A. ZANDER,
Rushville, Ill.

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick.
Address,

FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio
Address A. B. care Clay Record.
Chicago, Ill.

FOR SALE

I have a Brick and Tile Plant costing $20,000, Electric Power, Steam Dryer. Make soft mud and stiff mud brick and drain tile. I want a man with a few thousand dollars to take one-half interest in the business If you are looking for a good chance to get into business by investing at 50 cents on the dollar, address

J. J. MILLER,
Benton Harbor, Mich.

FOR SALE

New Sand Lime Brick Hardening Cylinder, 6 feet diameter by 68 feet long. One removable head. Immediate shipment.

FRANKLIN BOILER WORKS CO.,
Troy, N. Y.

PLANT FOR SALE

Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousaud capacity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7.00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles. Cheap fuel and labor; can operate with steam dryer year around. Improvements have cost $16,000, but I am not a brick-maker and to the right party will sell low and easy payments

W. L. JONES,
Lock Box 5, Williamsburg, Va.

THE BOSS SYSTEM OF BURNING BRICK

Involves the ORIGINAL PRINCIPLE of applying AIR UNDER PRESSURE.

Applies to Any Style of Kiln.

Absolute Control of Heat in Kiln.

WRITE FOR CATALOG

40% Reduction in Fuel Cost.

Burns All First-Class Hard Brick.

JOHN C. BOSS OFFICE: MONGER BLDG. **Elkhart, Indiana**

Do Your Brick Turn White?

HERE IS THE REMEDY.

PRECIPITATED

Carbonate K.B. C.F.H. of Barytes

The only preventative for scum and discoloration on facing Brick and Terra Cotta; neutralizing the Sulphate of Lime in the Clay and Water.

Circulars and Particulars on Application.

GABRIEL & SCHALL

205 Pearl Street NEW YORK P. O. Box 1712

They Never Fade

Twenty long years of time and weather have tried out Ricketson's Famous Red Brick" Brand

..COLOR..

for Mortar, Brick, Cement, Stone, etc., Proves it Absolutely Permanent. Red, Brown, Buff, Purple, Black.

RICKETSON MINERAL PAINT WORKS
MILWAUKEE, WISCONSIN.

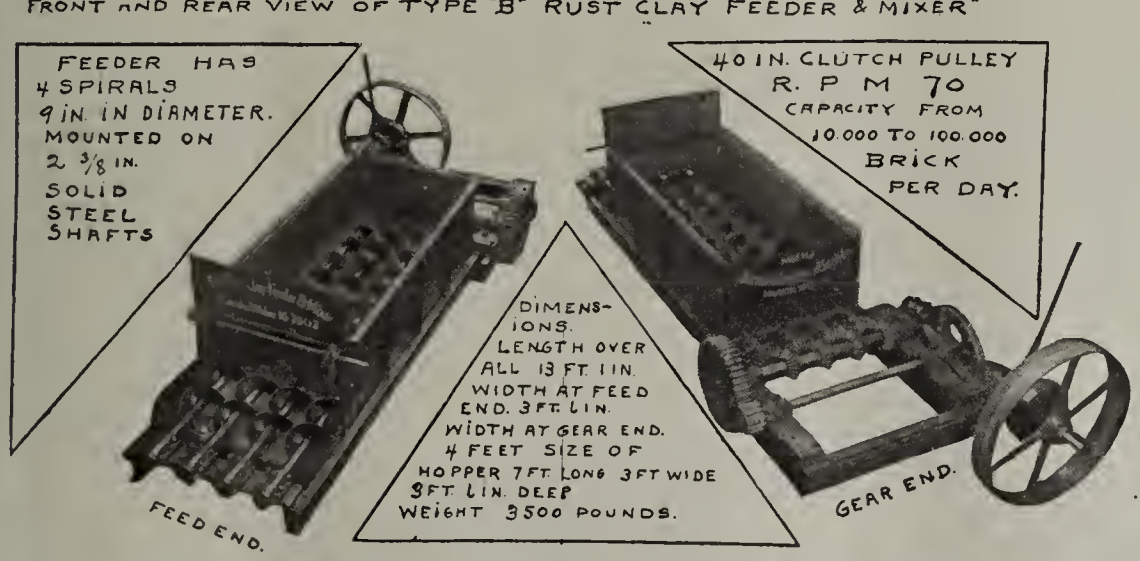
C. K. WILLIAMS & CO.

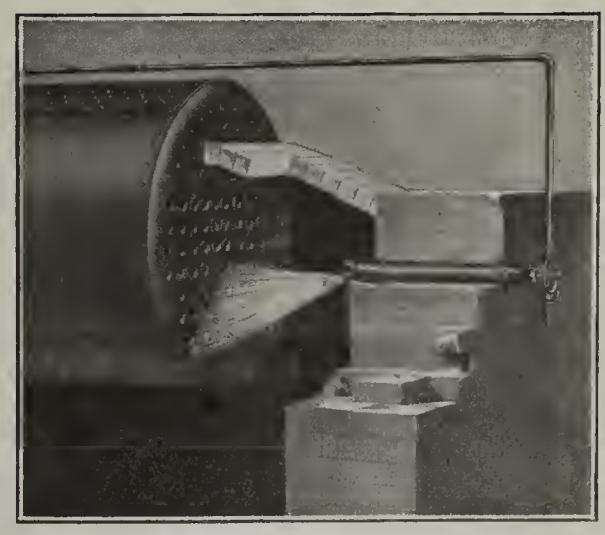
EASTON, PA.

BRICK AND MORTAR

COLORING

"FRONT AND REAR VIEW OF TYPE "B" RUST CLAY FEEDER & MIXER"





Don't Let Your Profits Run Away

We can save you from $500.00 to $1,000.00 per year, through the use of this modern Clay Feeder.

Write today for our latest catalog fully describing this new **Clay Feeder and Mixer.**

The Marion Flue Blower, (patented February 23. 1909) will save 10 per cent of your fuel. It will insure you clean tubes; will prolong the life of the boiler; it will prevent the accumulation of soot; it will save the cost of steam hose; it will enable you to clean your boiler while in commision. The accompanying cut shows how the Flue Blower is installed in the rear wall of your boiler. Each blower is fitted with a nozzle which rotates, and each opening in the nozzle blows a section of the boiler tubes at a time. We furnish different sizes as required, and positively guarantee to blow each flue clean.

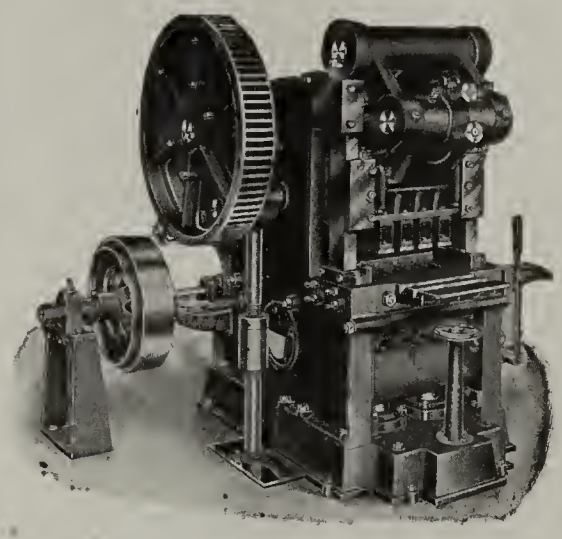
Please send for our latest catalog fully describing this useful invention.

MARION MACHINE FOUNDRY AND SUPPLY CO., - Marion, Inndiana

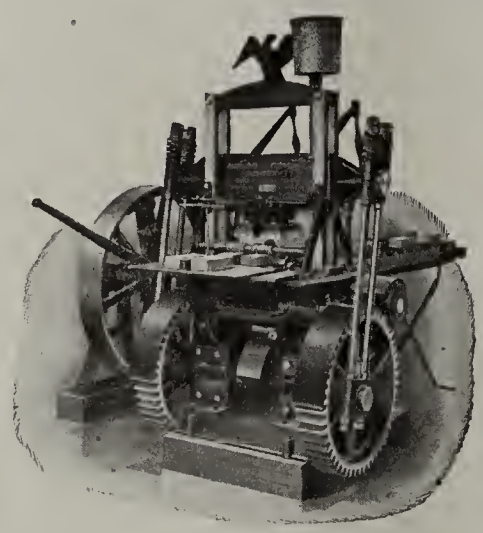
THE AMERICAN CLAY MACHINERY COMPANY

BUILT RIGHT RUN RIGHT

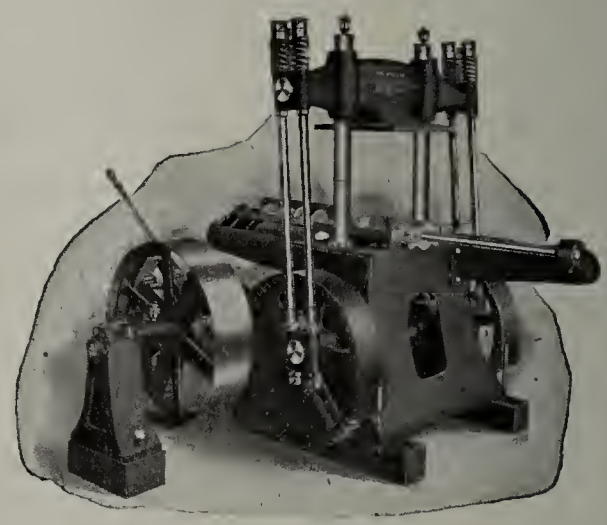
BUCYRUS OHIO, U.S.A.



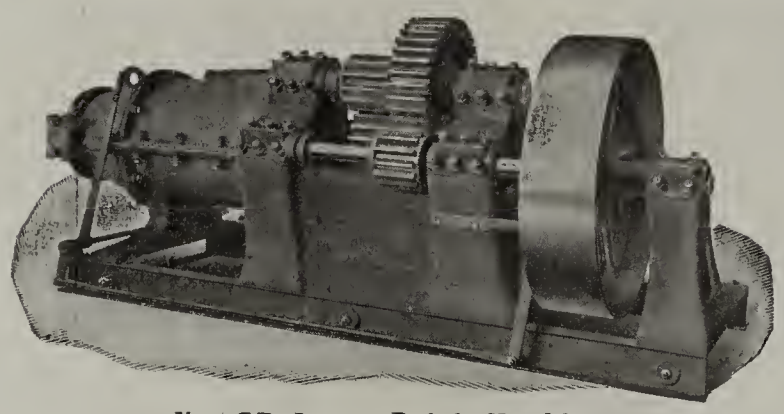
Model "B" Dry Press



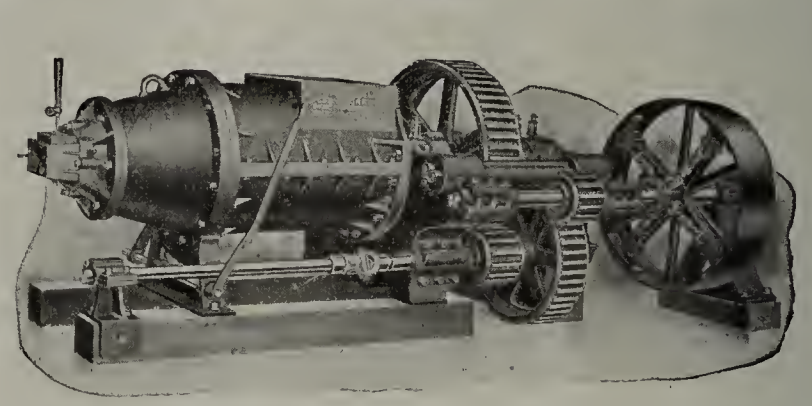
Eagle Repress



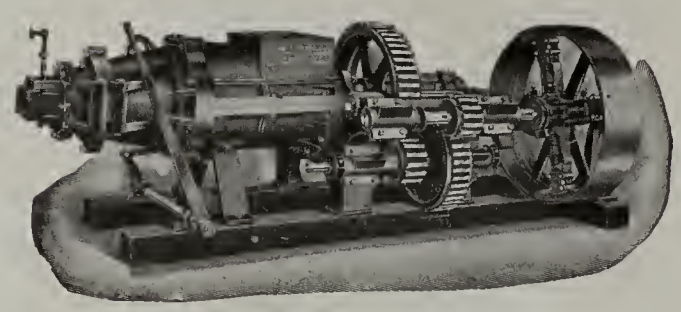
Roofing Tile Press



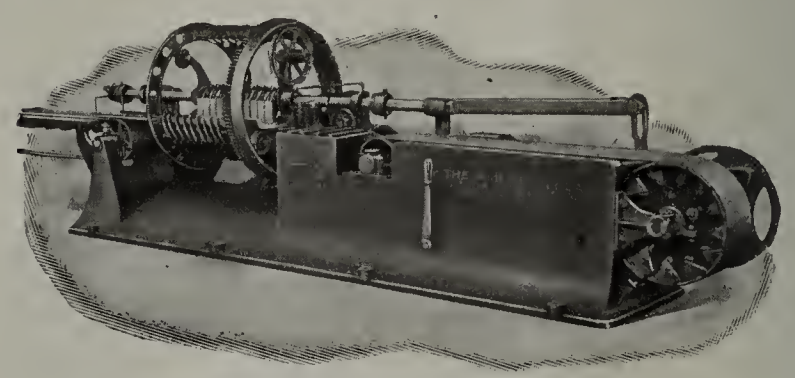
No. 65 Auger Brick Machine



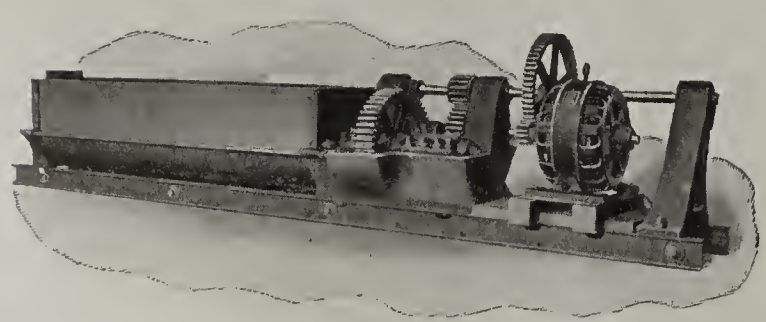
Special Giant Brick Machine



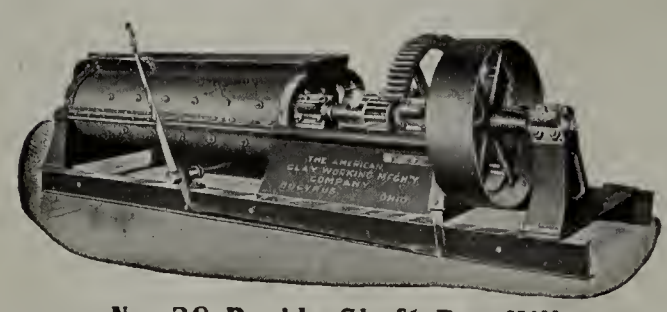
No. 2 Giant Brick Machine



No. 83 Automatic Cutter



No. 51 Electrical Driven Pug Mill



No. 38 Double Shaft Pug Mill

We Build Every Machine and Every Appliance Needed for the Manufacture of Every Class of Clay Products by Every Process

THE AMERICAN CLAY MACHINERY COMPANY

BUILT RIGHT RUN RIGHT

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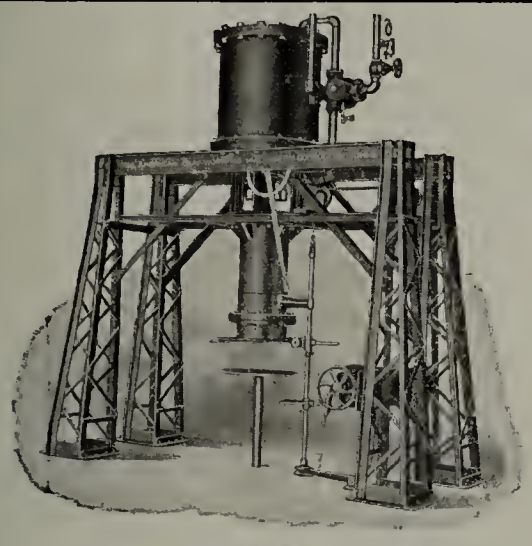
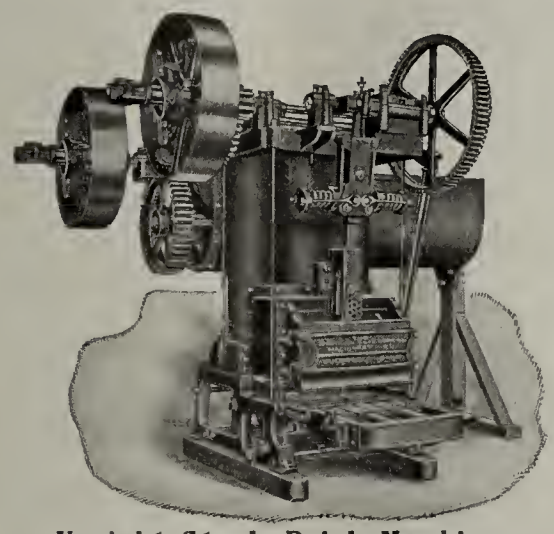
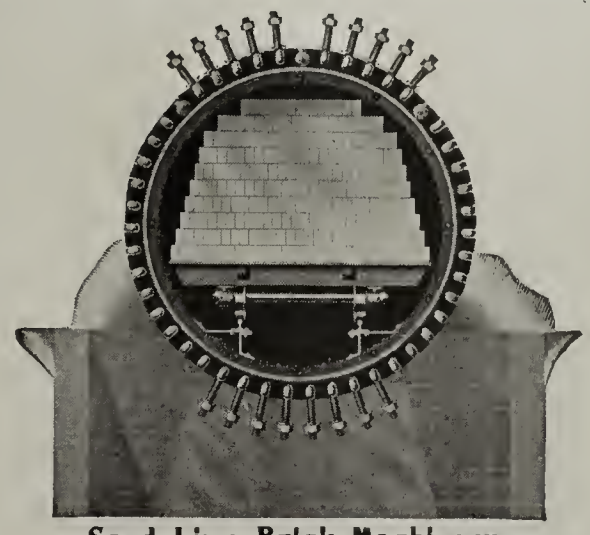


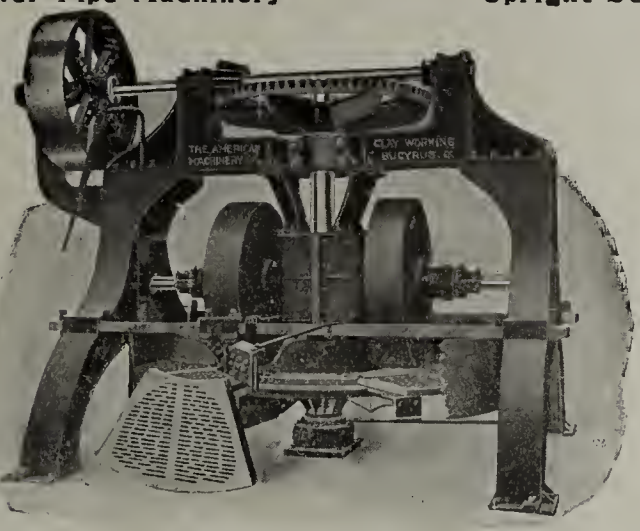
Sewer Pipe Machinery



Upright Stock Brick Machine



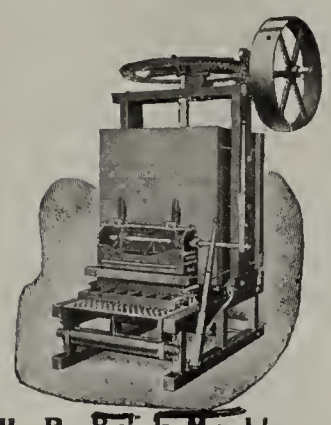
Sand-Lime Brick Machinery



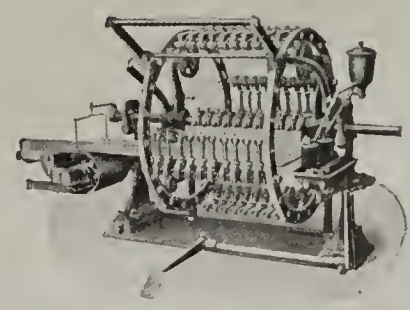
9 Foot Dry Pan

Blower Dryer Apparatus

Mold Sander



H. P. Brick Machine



No. 62 Hand Power Cutter

Dry Cars

Disintegrators

Winding Drums

We are Much the Largest and Much the Most Extensive Manufacturers of Much the Best Clay Working Machinery in the World

Fire Brick——Fire Clay

AND FIRE CLAY PRODUCTS

Manufactured out of highest grade Missouri semi-flint fire clay.
A large stock of Number One brick and shapes always on hand.
Let us quote you prices and we will save you money.
Samples sent upon request. Address

Mexico Brick & Fire Clay Co.

MEXICO, MISSOURI

Something New In Brick Kilns and Dryers

The Dennis Double Chamber Up and Down Draft Brick Kilns and Direct Heat and Hot Air Brick Dryers show many new features that make them superior to all others. Economical, durable and strong in construction and operation, having many points of dvantage that appeal to practical brickmakers. Patented April 14, 1903 and September 8, 1903 Brick plants installed and put in operation. Write for booklet. Correspondence solicited.

F. W. DENNIS,
145 Water St., Norfolk, Va.

Approved and Labeled

Fire! Fire!! Fire!!!

Extinguishers

Protect your Home, Business, Factory

Insurance Reduced. Child can Operate.
Made of Copper. Will Last a Lifetime.

Chemical charges can be procured at any drug store

Write today; don't wait; delays are dangerous.

O. J. Childs Company

Sole Manufacturers — Utica, N. Y.

AMERICAN RING-HAMMER PULVERIZER

Two Models, one for Clay, Shale, one for Rock

Will pulverize from 4 mesh to 200 mesh, 1 to 50 tons per hour, according to size of machine, fineness required, kind and condition of material.

30% to 60% less speed, and 25% to 50% less power, due to the RING and its utilization of CENTRIFUGAL FORCE

We make six sizes and every machine guaranteed to do the work which it is contracted to do when sold.

Revolving Screens Air Separators
Ask for Circulars and Information

AMERICAN PULVERIZER CO.

Suite 410 Jaccard Bldg., ST. LOUIS, MO.

DISTRICT SALES OFFICES:
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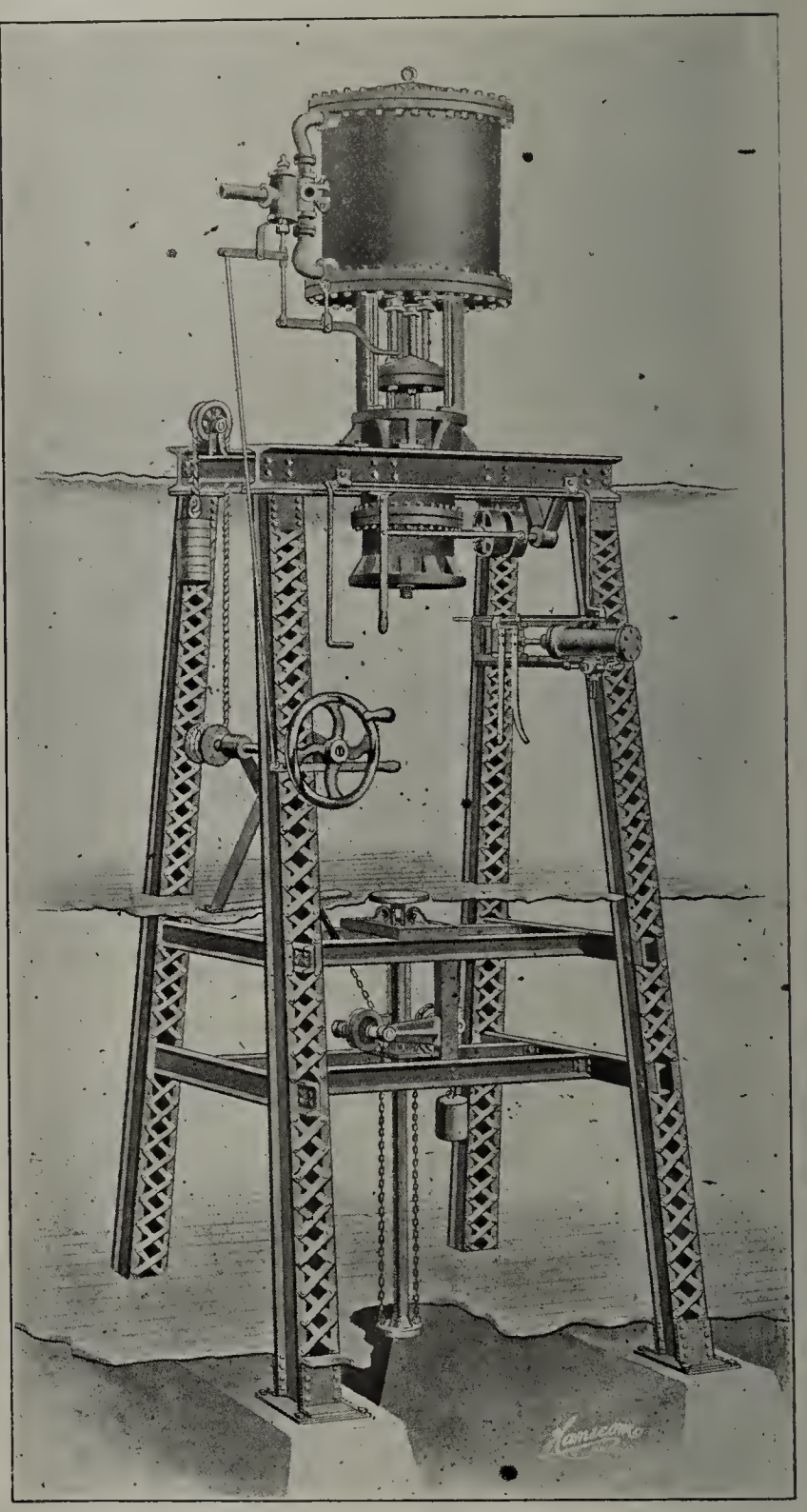
I. R. Coles & Co., 39 Cortland St., New York City.
Lindrooth, Shubart & Co., Boston Bldg., Denver, Colo.



44 X 20 SEWER PIPE PRESS

SEWER-PIPE MACHINERY

COMPLETE EQUIPMENT

THE TURNER, VAUGHN & TAYLOR COMPANY

CUYAHOGA FALLS, O.

REBUILT ENGINES AND BOILERS

The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

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ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

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BOILERS—Fire Box—80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 h. p., etc.

BOILERS—Vertical—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 3 h. p., etc.

HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

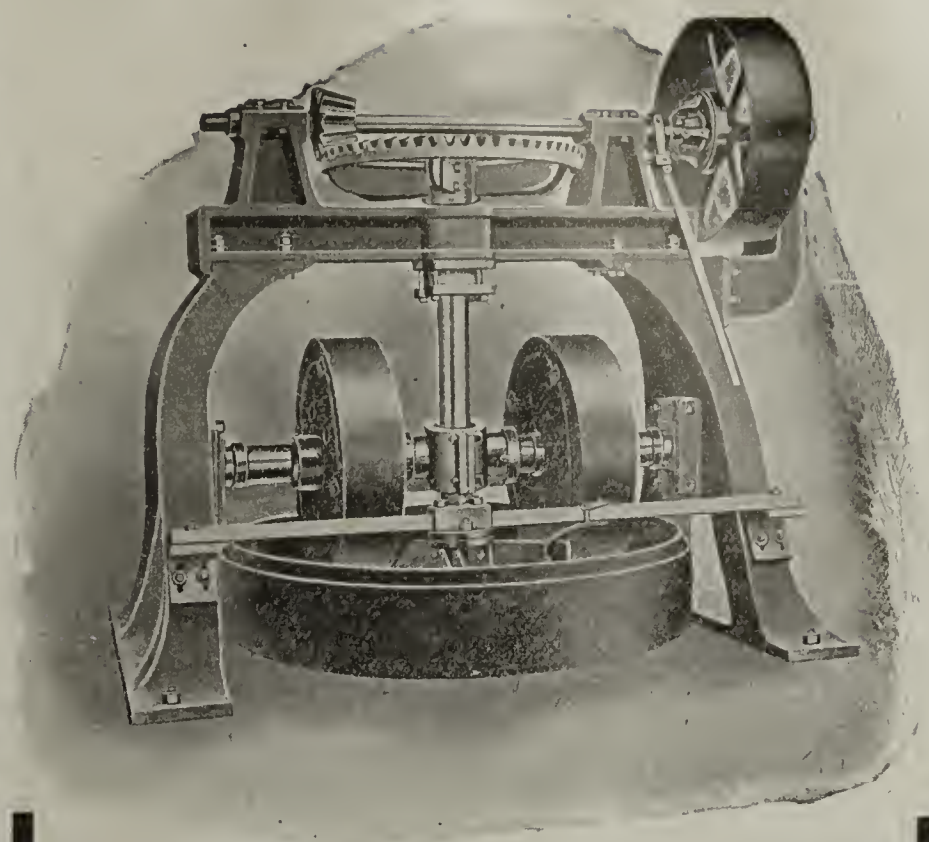
Saw Mills, Lath Mills, Edgers, Cut-Off Saws, Tanks, etc. Write for list.

Also full assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

The Randle Machinery Co.

1732 Powers Street **Cincinnati, Ohio**



PHILLIPS & McLAREN CO. PITTSBURG, PA.

BUILDERS OF

Pittsburgh Standard Dry and Wet, Revolving and Stationary Grinding Pans for Brick, Cement, Sand, Terra Cotta and all kinds of Refractory Materials.

ROCK AND ORE CRUSHERS

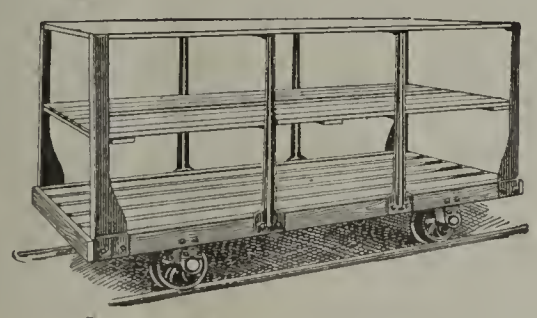
When writing for prices state kind of material and capacity required.

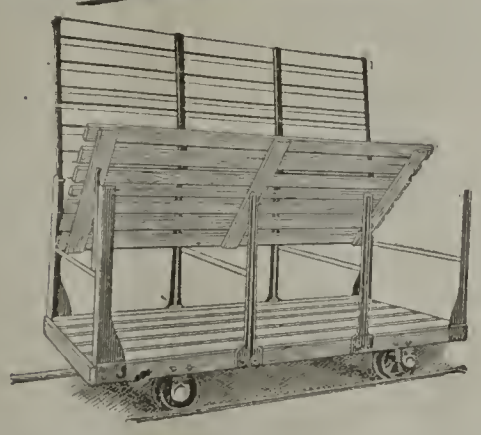
Eastern Offices

Stephen Girard Building, Philadelphia, Pa.

The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices





Vulcan Iron Works MASON CITY, IOWA

"A CHANGE IN FLUES MAKES THE DIFFERENCE IN DRYERS"

POTOMAC BRICK COMPANY

1413-G Street, N. W.

ELLIOTT S. MORSE, Gen. Mgr.

Washington, D. C., March 19, 1909.

THE KING ENGINEERING CO.,

Richmond Va.

Gentlemen:—Our No. 1 10-tunnel Sharer Radiated heat dryer before it was remodeled by you gave us an average of 55 cars per day of dry brick.

You completed the reconstruction of this dryer the latter part of January last. This day we have examined our records and find that our daily average now is 80 cars dry brick.

Yours very truly,

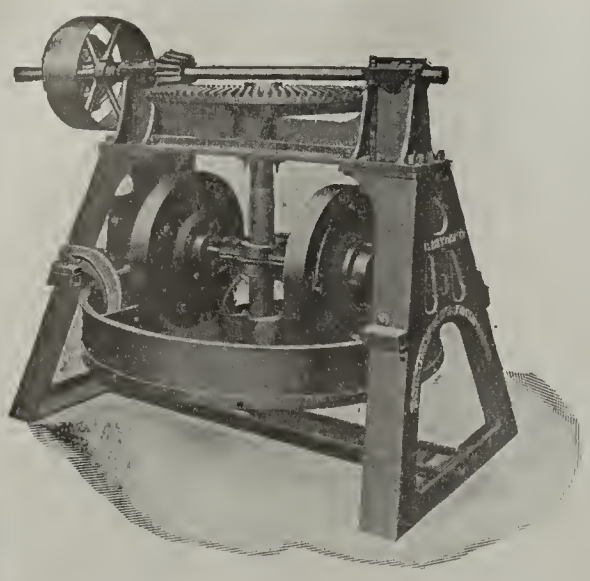
(Copy) ELLIOTT S. MORSE.

That which we have done for the above Company **we can do for You**. We can remodel **any** Radiated heat dryer **and increase its capacity** from 15 to 30 per cent.

THE KING ENGINEERING COMPANY

RICHMOND, VA.

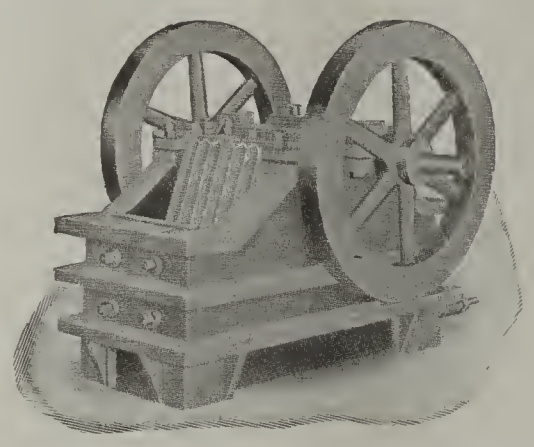
THE HAYDEN DRY PAN.



Masssive and well proportioned.
Best material.
Time tried and reliable.
Large capacity.
Acurate mechanism.
Independent or yoked mullers.

Send for specifications and prices before buying.

THE HAYDEN CLAY CRUSHER



This Crusher is specially designed and adapted for use as an auxiliary to the dry pan.
Capacity 10 to 30 tons per hour.
Simply constructed and the strongest machine of the kind on the market.

Send for circular and prices.

THE HAYDEN
BRICK TESTING RATTLER

For testing paving brick.
Built to the standard specifications of the N. B. M. A.
Best material and workmanship.

Send for descriptive matter.

The P. HAYDEN S. H. CO., Foundry and Machine Dept.

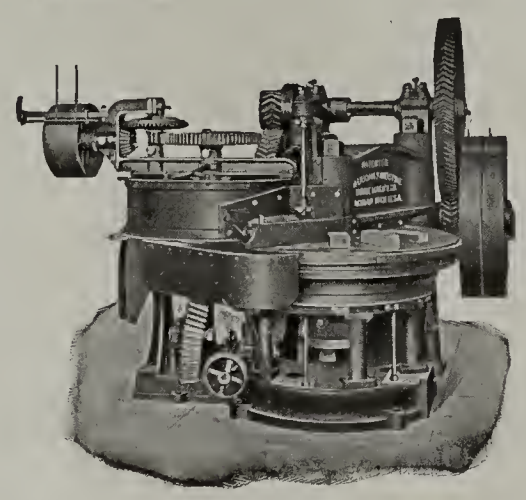
Manufacturers of

WET AND DRY PANS, CLAY CRUSHERS, STEAM CLAY PRESSES, RATTLERS, BRICK CARS, CARWHEELS, AXLES, KILN BANDS, etc.

112 West Broad Street **COLUMBUS, OHIO**

The American Sandstone Brick Machinery Co.

INCORPORATED APRIL, 1902
SAGINAW W. S., MICH.



Improved Saginaw Rotary Presses

Are now being built with extra table for making fancy brick, on which double pressure is exerted.

Don't confuse our Practical System with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant, starting and operating at our expense until at least 100,000 brick are made before asking for a settlement.

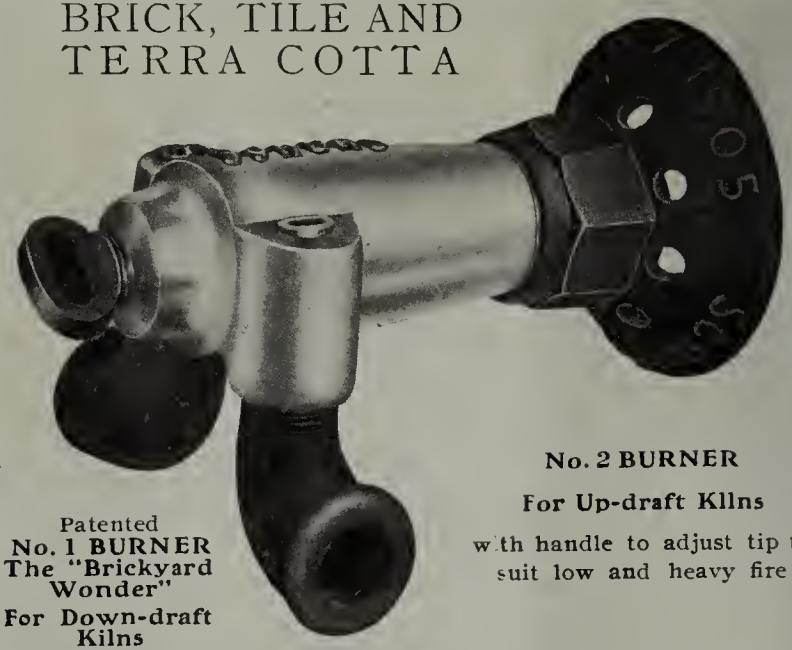
Our plants are **installed under the supervision of Practical Engineers who know how Sand-Lime Brick should be and can be made.** We have **Practical Plants Running Successfully** to show to prospective investors.

WE ARE NOT SCIENTISTS

We **Produce Results,** because we are the **Oldest Practical Sand-Lime Engineering Company Doing Business in the United States,** and **we defy contradiction.**

SCHURS Perfected Oil Burners

MOST ECONOMICAL BURNERS ON THE MARKET. DESIGNED ESPECIALLY FOR BURNING BRICK, TILE AND TERRA COTTA



ADJUSTABLE TIP

Patented
No. 1 BURNER
The "Brickyard Wonder"
For Down-draft Kilns

No. 2 BURNER
For Up-draft Kilns
with handle to adjust tip to suit low and heavy fire

Not an experiment, but a severely tested, well proved burner whose superiority to all others has been amply demonstrated.

Write for Booklet containing full information.

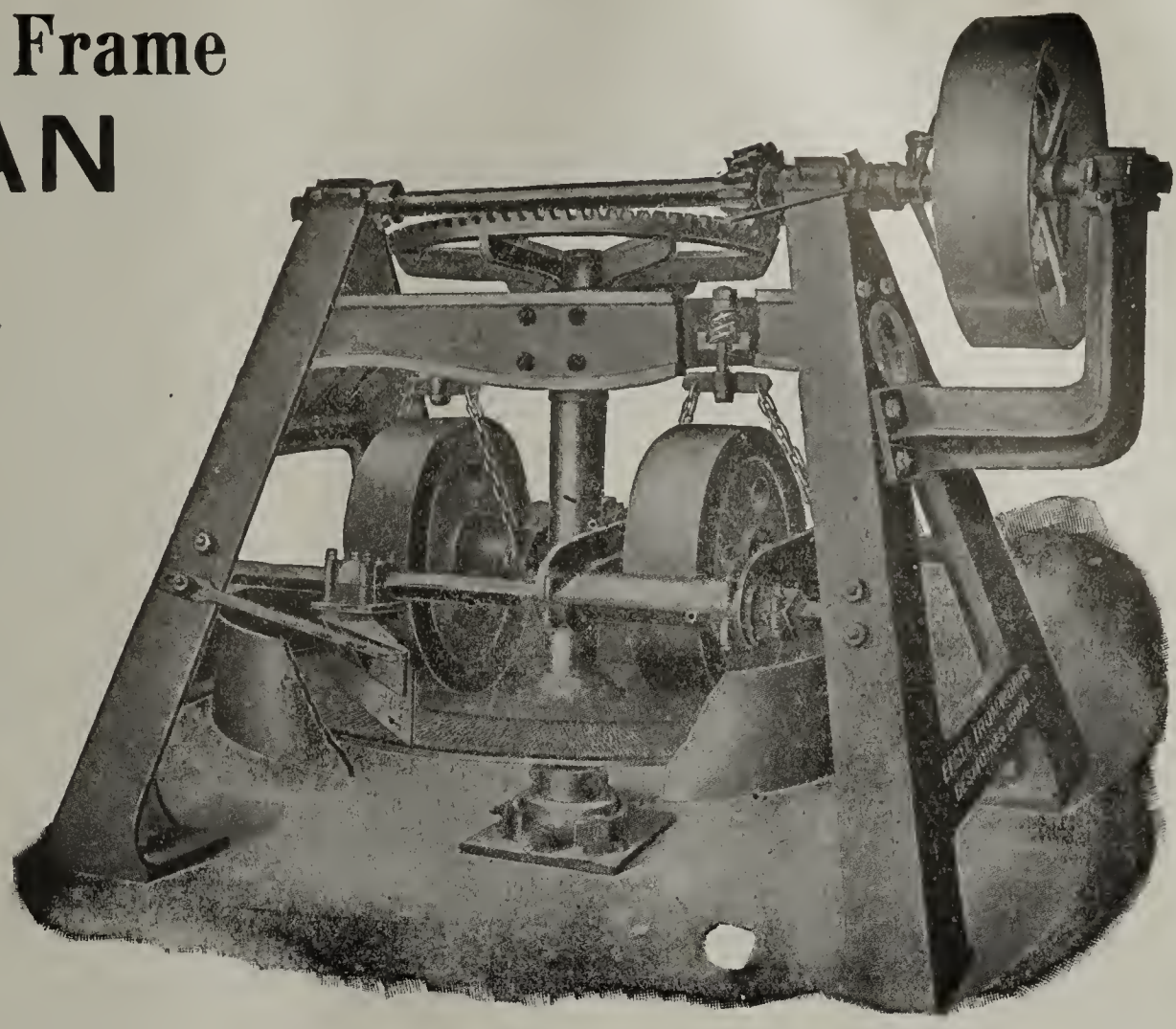
JOHN SCHURS, Patentee and Manufacturer
1007 NORTH MAIN STREET LOS ANGELES, CAL.

Nine Foot Iron Frame
DRY PAN

With Independent and Suspended

MULLERS

A well-tried and proven Success.



EAGLE IRON WORKS, BUILDERS, DES MOINES, IOWA

Steel Brick Pallets

Built Right,

Price Right,

Write Us

STYLE No. 4.

The only Steel Bench Pallet that can be stacked without slipping. They Interlock. Light, Strong, Rigid. (Patented.)

ALL STYLES

MADE EXCLUSIVELY BY

THE OHIO GALVANIZING & MANUFACTURING CO.

NILES, OHIO

PAUL FUCHS

Manager of the Excelsior Granite Brick Co. -:- Specialist for the Sand-Lime Brick Industry

Inventor of a New Process for Making "GRANITE BRICK"

My system enables the manufacturer to turn out a sand-lime brick of a compression strength of 9,000 pounds per square inch from proper raw materials. Send in a one-pound fair average sample of your sand and a one-pound sample of your lime for examination.

Porcelain Enamel for Clay Brick

Forward, express charges prepaid, ten brick for testing purposes.

Special Enamel for Sand-Lime Brick

Send in as many brick as colors wanted and specify colors desired.

1747 CARMEN AVE. Chicago, U.S.A.

HANDLE YOUR CLAY WITH ONE MAN AND

The Thew Steam Shovels

Made In Four Sizes. Mounted on Car Wheels or Traction Wheels.

Type No. 2 Shovel—Pioneer Fireproofing Co., Ottawa, Ill.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adiusted to cut to any desired level.

: : Ouly One Operator Required.
Wire Cables used instead of Chains.
Strictly First-Class in Every Detall.

Economical for brickyards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

Write us for Catalogues and Information.

THE THEW AUTOMATIC SHOVEL CO.

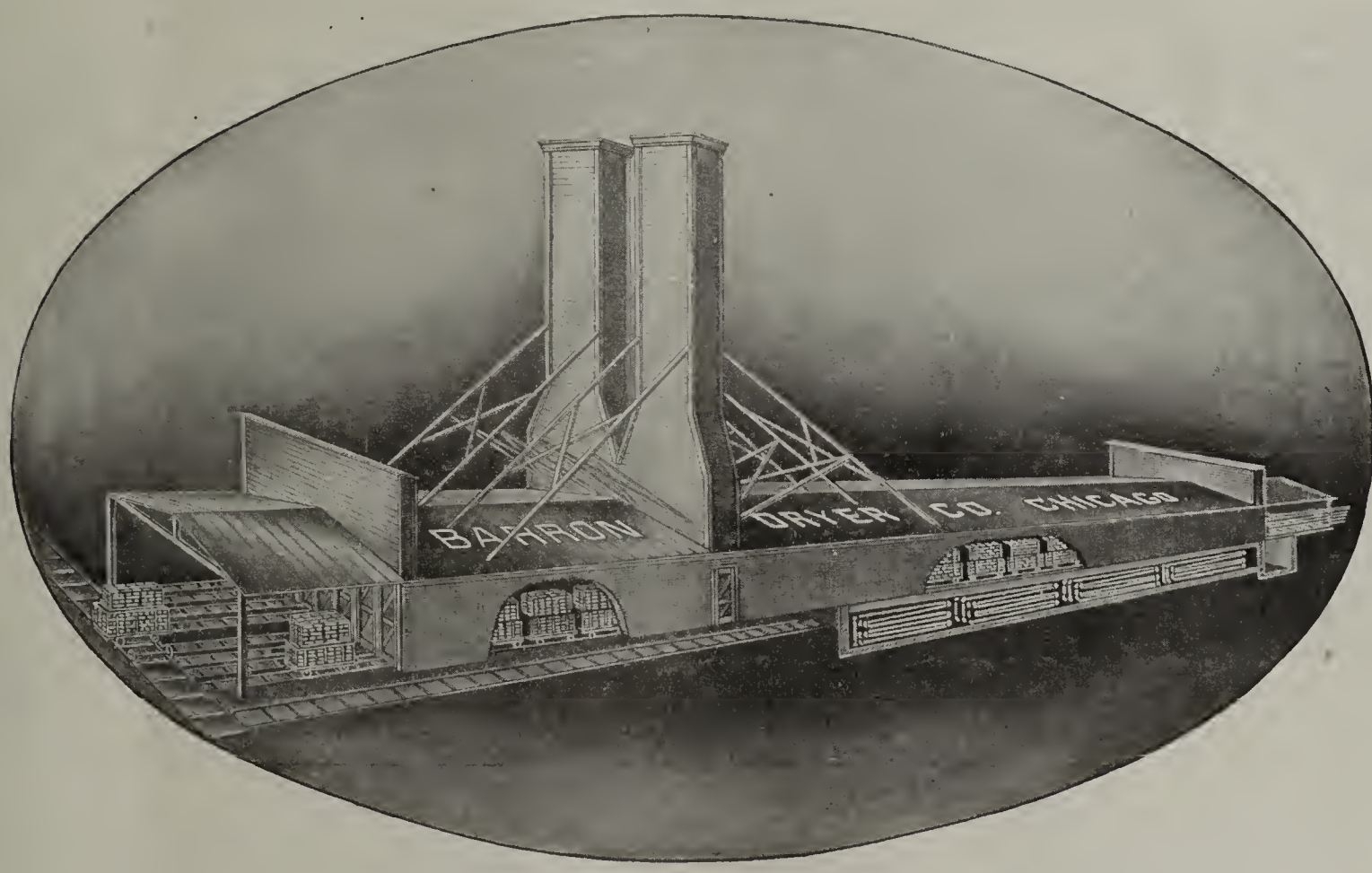
LORAIN, OHIO

BARRON DRYER COMPANY

Established 1879

MANUFACTURERS, PATENTEES and BUILDERS of the

CHICAGO IRON CLAD DRYERS
BARRON'S TENDER CLAY DRYERS



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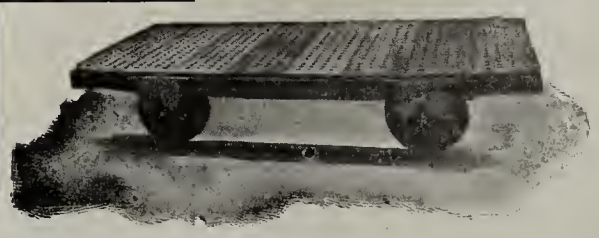
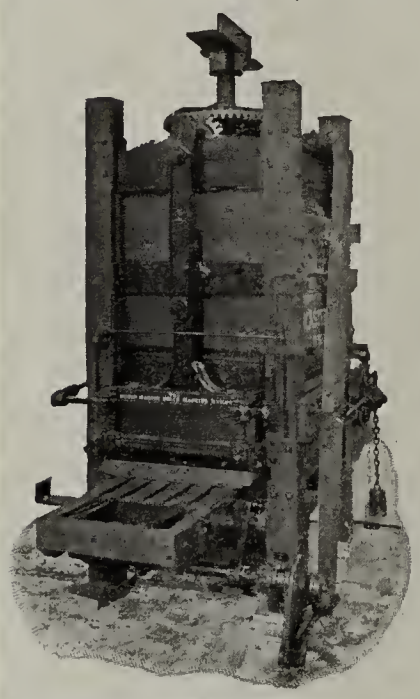


DRYER CARS

TRUCKS



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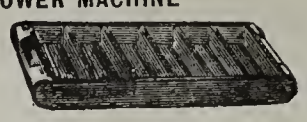
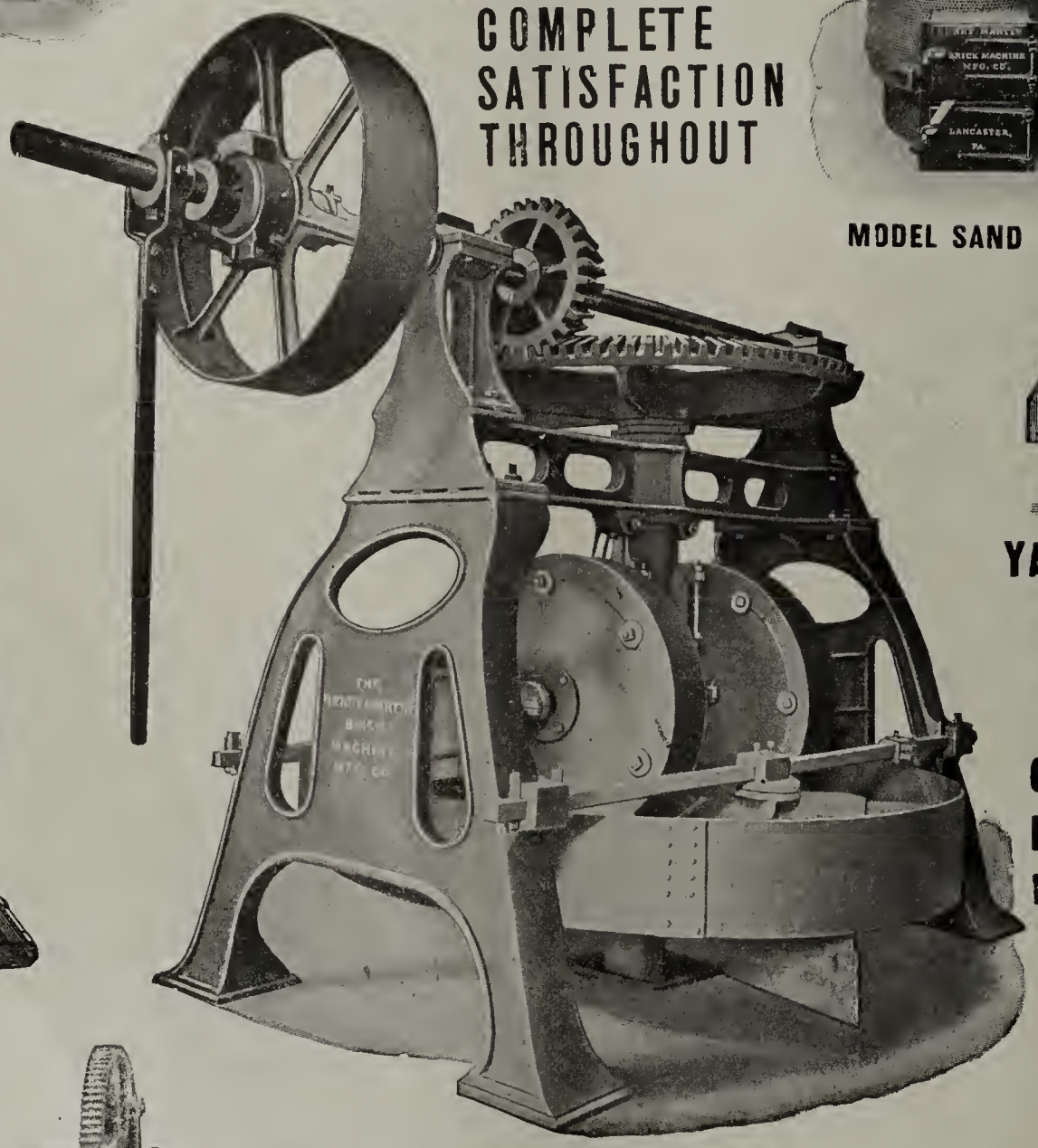


BRICK MOULDS THAT ARE BUILT FOR HARD USAGE IS THE "MARTIN." TRY A SET



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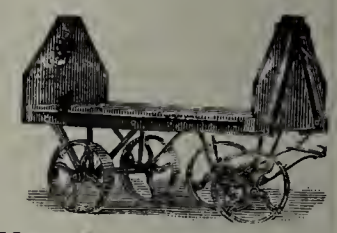

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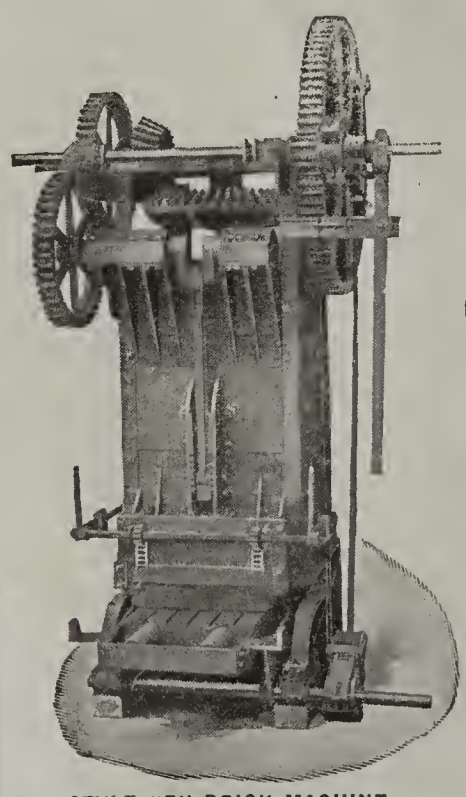

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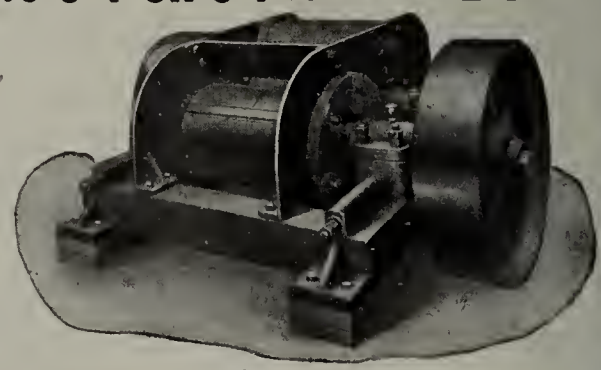

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CLAY-WORKING EHGINEERS & MACHINERY EXPERTS

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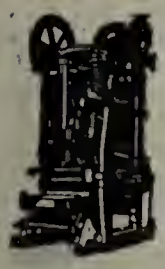

THE "MARTIN" STEAM BRICK "DRYING SYSTEM"

PATENTED February, 22d, 1898, No. 599509
October 10, 1905. No. 95520
November 14, 1905, No. 804489
May 26, 1908. No. 888831

This Dryer, and the design in arranging it, are under the protection of the United States Government by virtue of patents granted. Patents have also been taken out in all the principal foreign countries. We are the sole owners and control these important patents and have authorized NO ONE to manufacture or sell the "MARTIN"

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SUPERIOR IN EVERY RESPECT TO ANY OTHER SYSTEM—Labor Saving Throughout. Dispenses with Truckers and car Pushers. Pallets Automatically Return to Brick Machine. Quick to install and low in price, and takes up very little Yard room.

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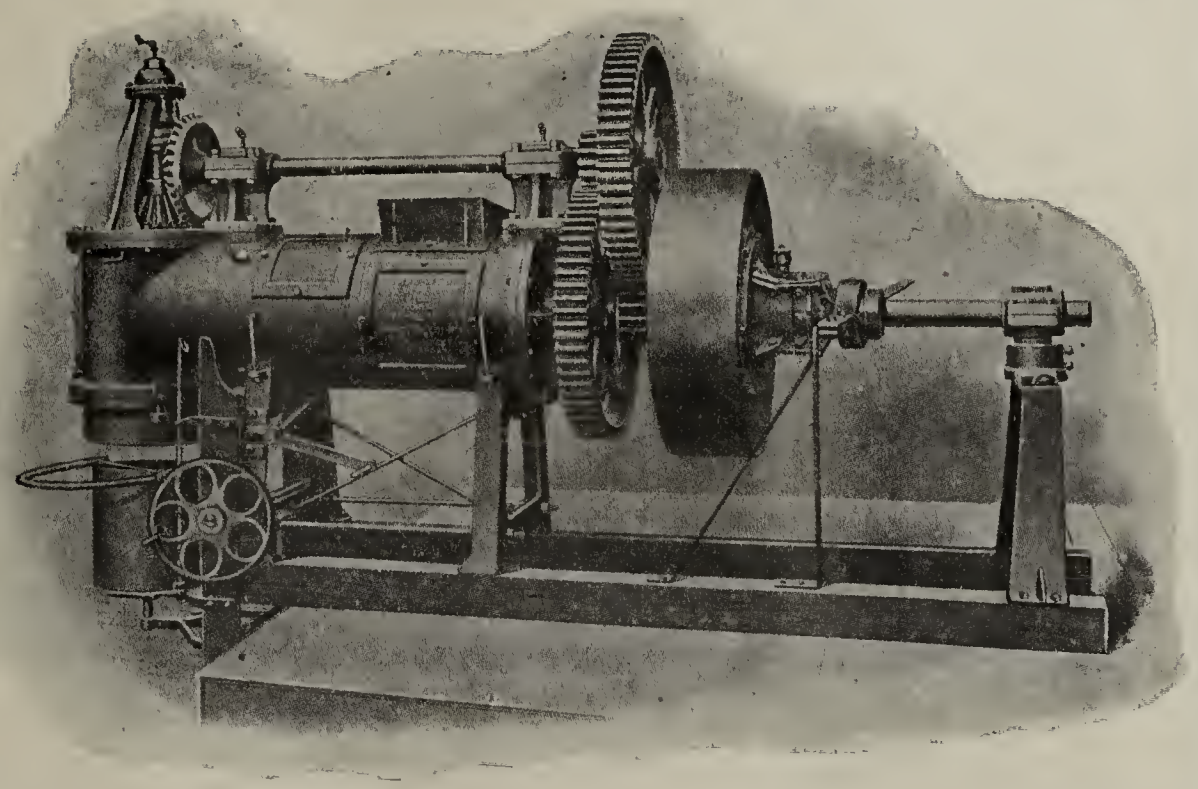

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Electric Side Dump Car.

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Ball Bearing Turntable. Made in sizes from 4 ft. to 11 ft. in diameter.

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Steel Mine and Quarry Car.

The Atlas Car and Mfg. Co.

CLEVELAND, OHIO

VOL. 36 No. 6

CLAY RECORD

September 30, 1909

A JOURNAL DEVOTED TO THE DISSEMINATION OF ALL MATTERS PERTAINING TO THE CLAY INDUSTRY

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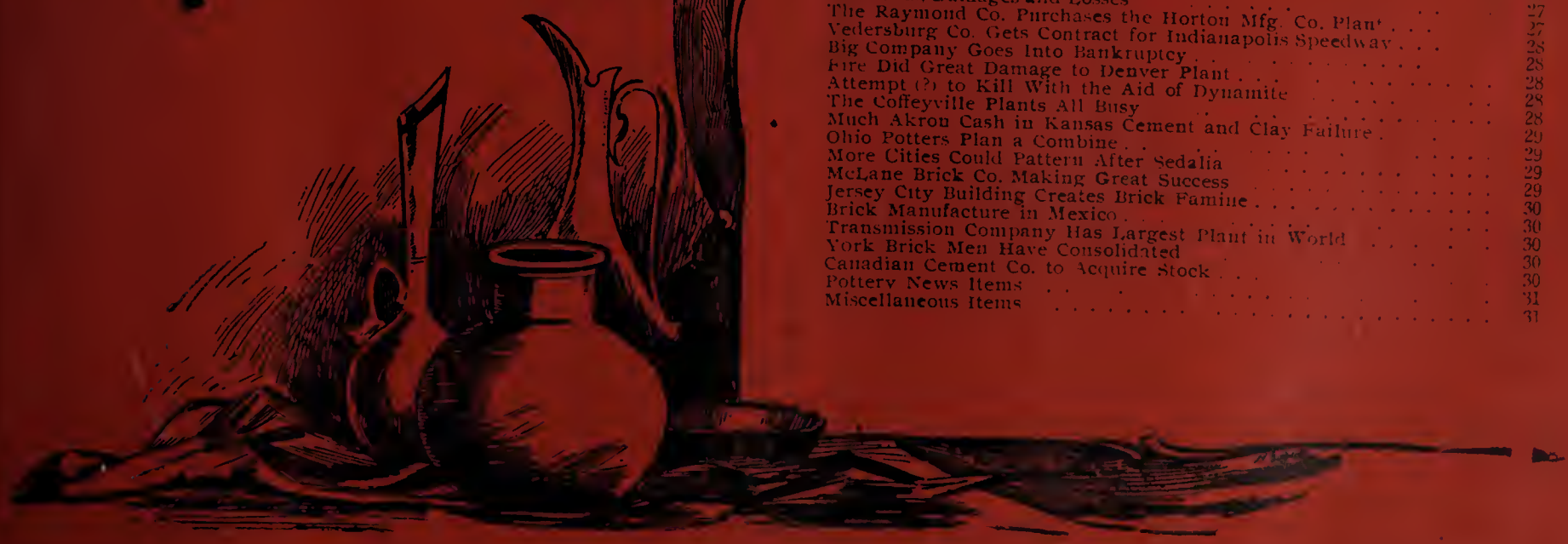

imperative demands from all sections of the country for a cutting table to accurately cut stiff mud face brick has brought out the Champion, the next upward step in the evolution of Rotary Cutters. It is semi-automatic and all of the desired qualities are there, we find nothing to improve about it. It has won its way by sheer merit. It has the good will of every face brick maker who uses it, and many more who have but seen it. It is chock full of perfection. We haven't room to tell you all about it here, but write now.

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Been doing it 20 years.
Strong Simple and Capable.
24 in operation in St. Louis District.

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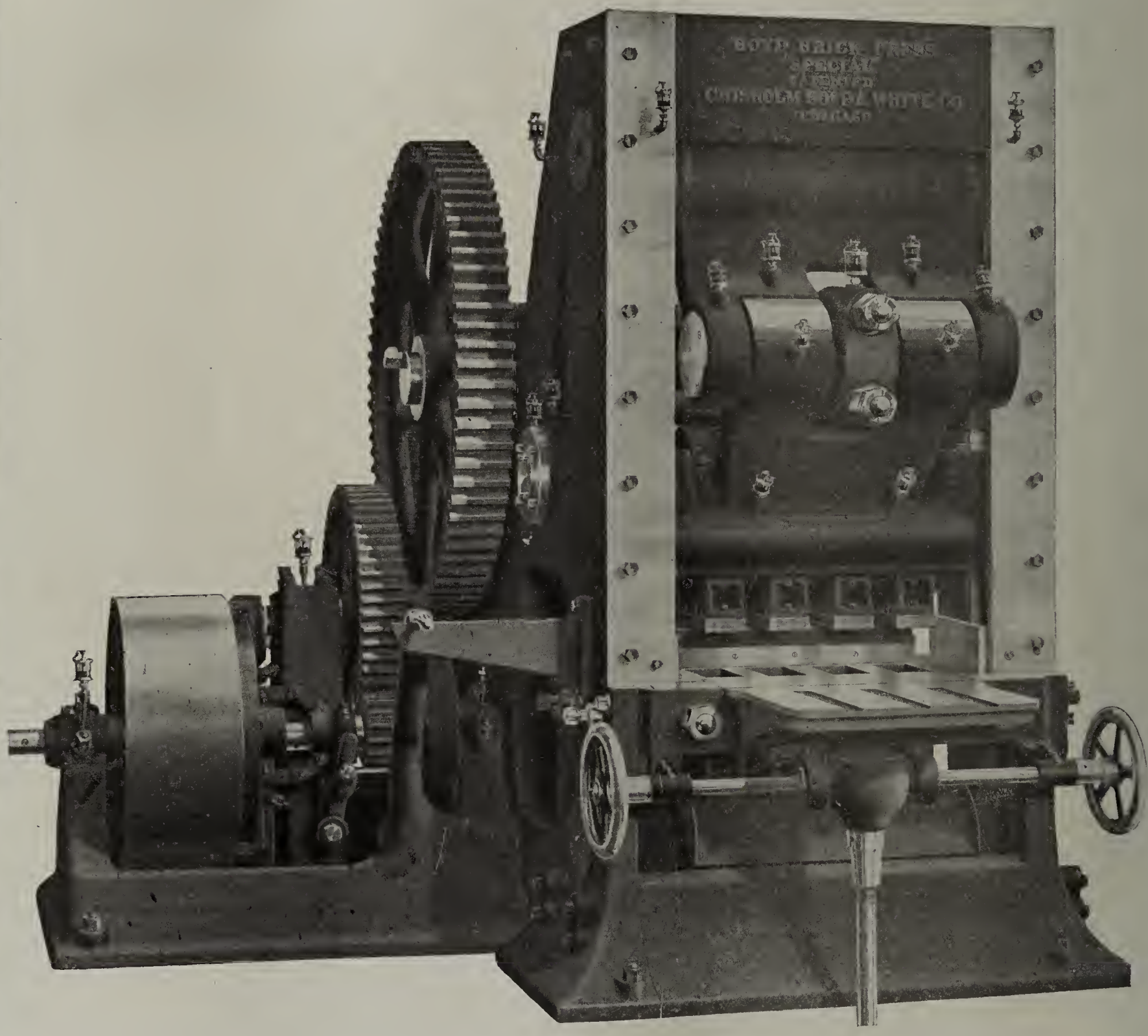
Built in Two, Four and Six-Mold Sizes



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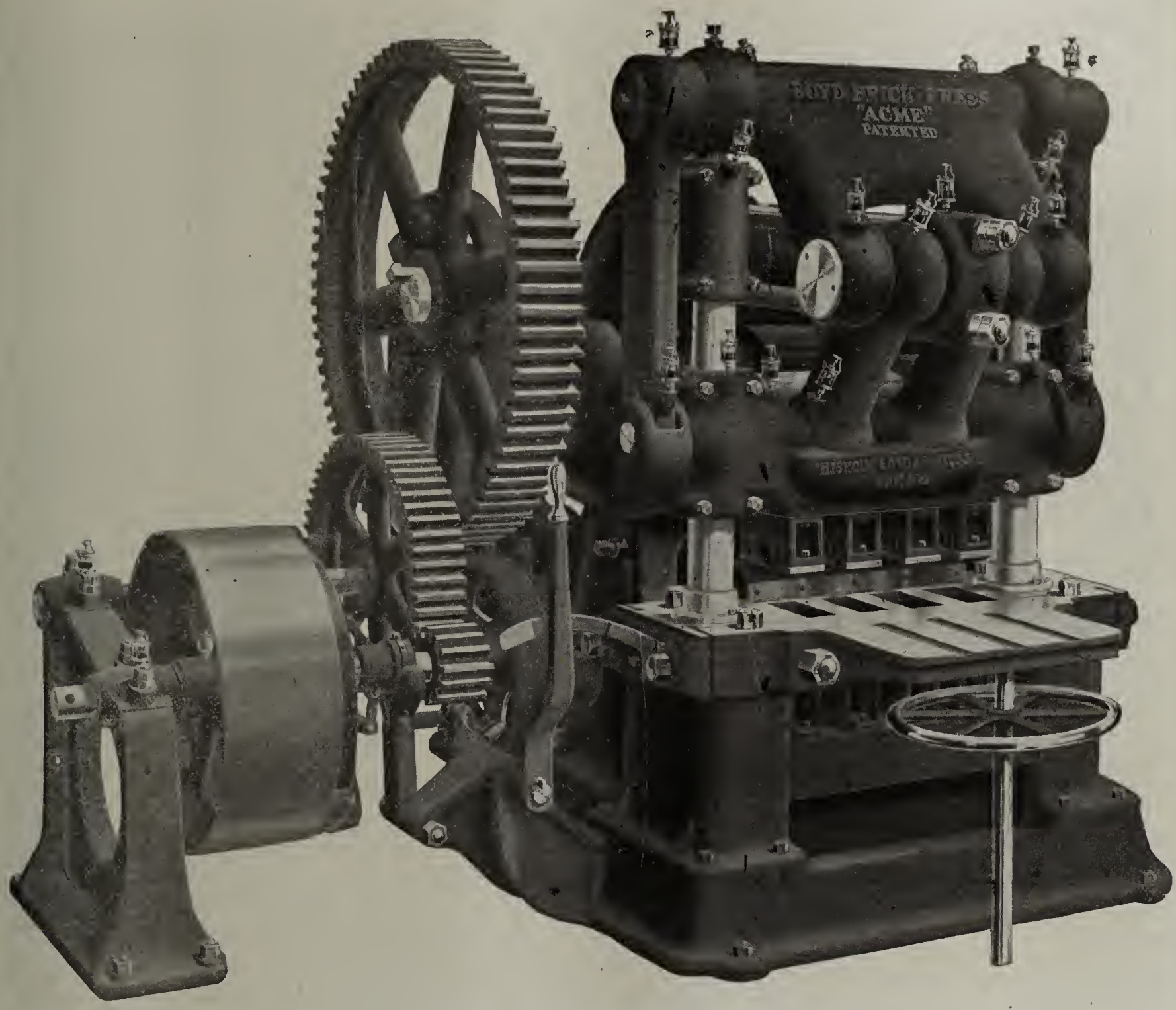

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Detailed perfection, strength, endurance and quality of product have made the Boyd, the Brick Press by which all others are judged.

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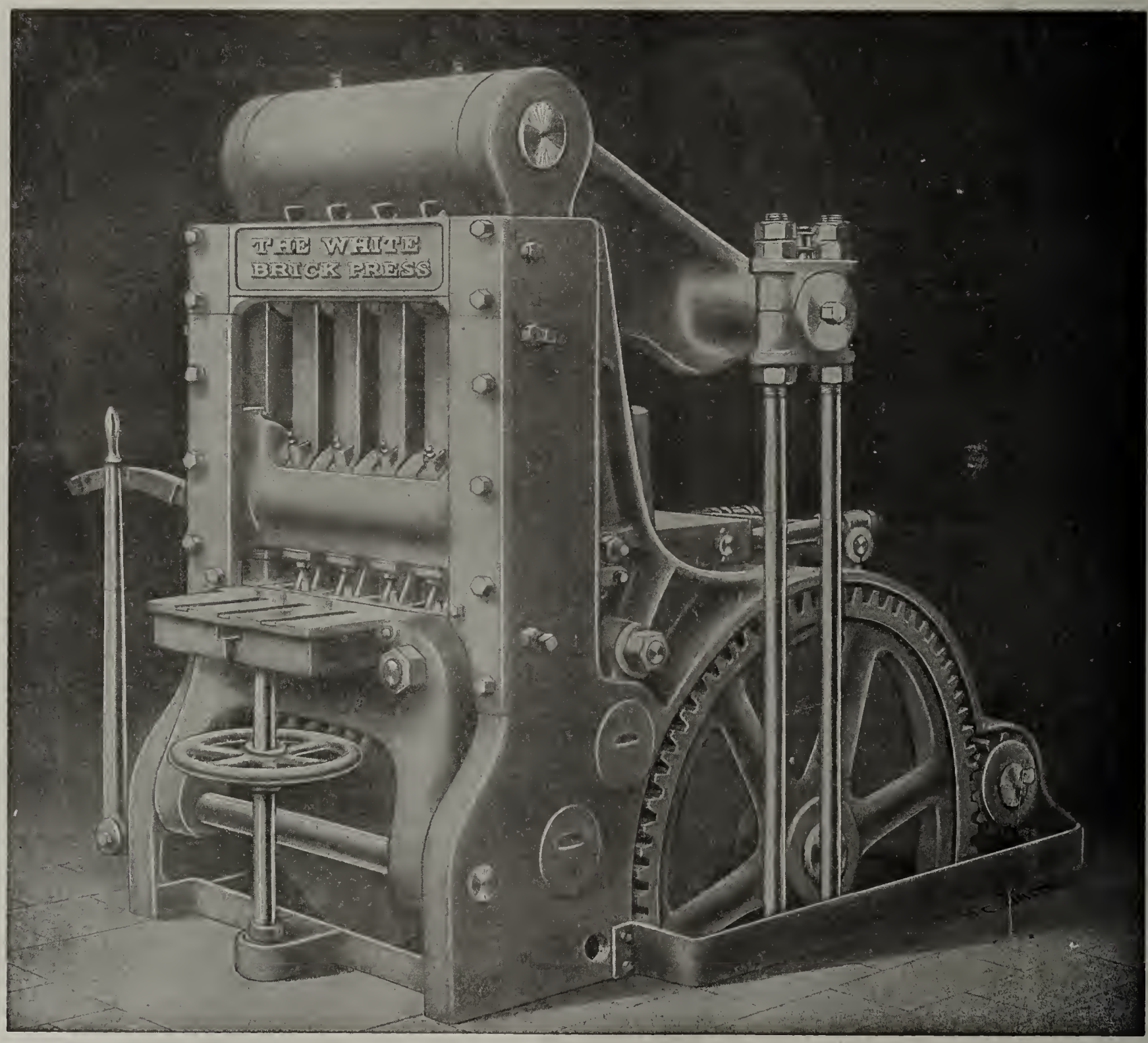
ALWAYS ON THE JOB
THE WHITE BRICK PRESS



When You Learn of a Breakdown on the Yard, You may be sure it is NOT the PRESS, if it is a WHITE

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1308 GREAT NORTHERN BUILDING, CHICAGO

The Fernholtz Brick Machinery Company

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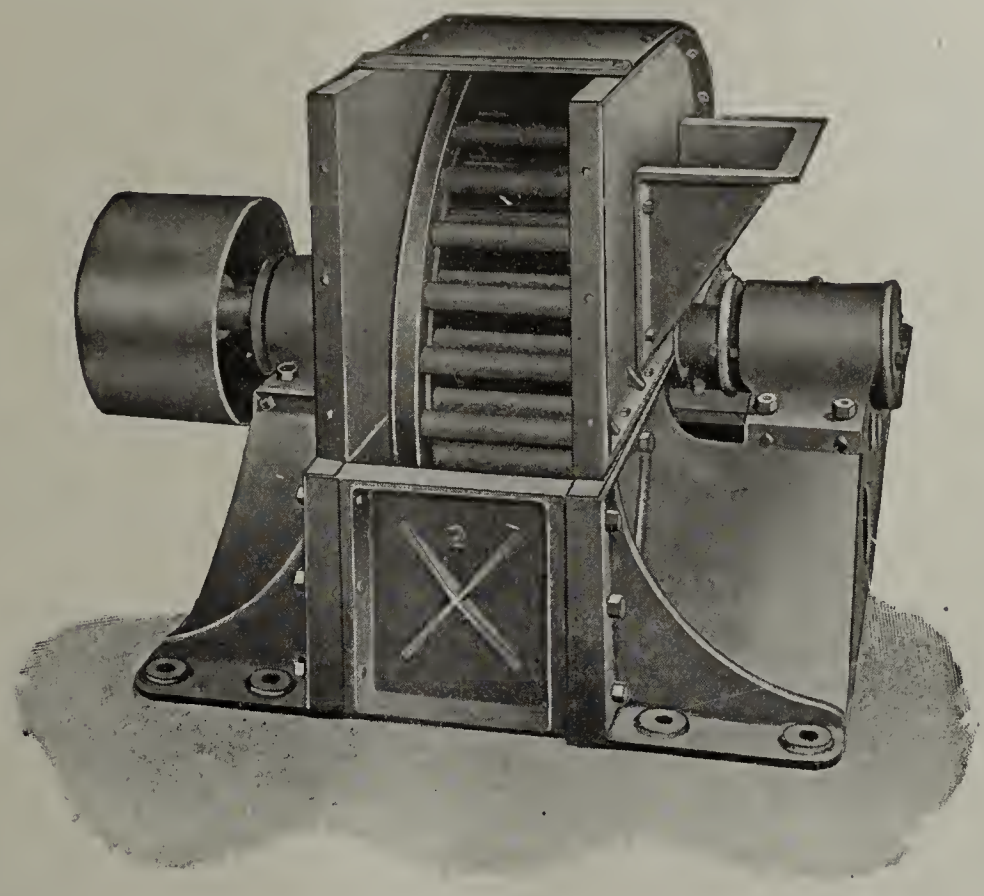
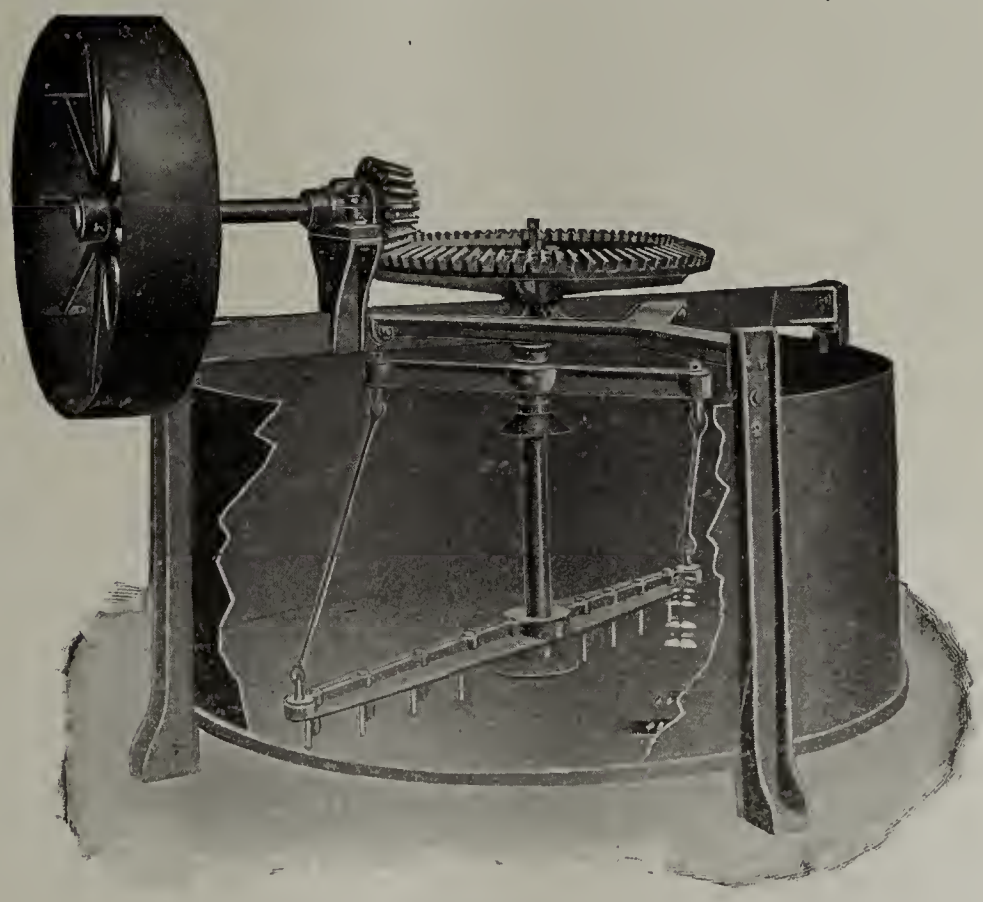


Fitted with Adjustable Pins

THE FERNHOLTZ CLAY PULVERIZER

If you want to make a FACE BRICK you need it.



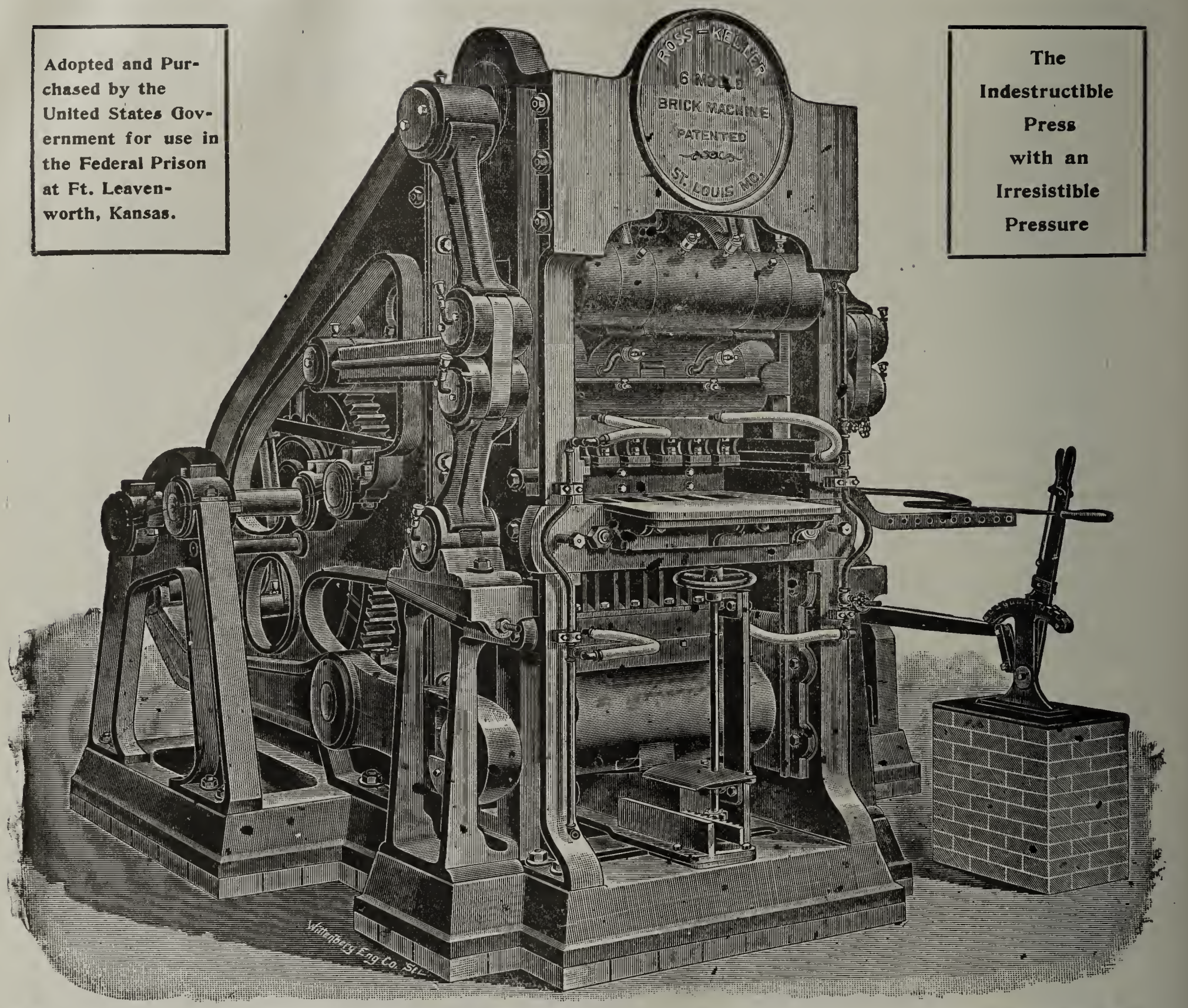
Makes Your Brick Uniform

A GOOD MIXER IS ALWAY. APPRECIATED

***The* Fernholtz Brick Machinery Company,**
Boyle Ave. and Old Manchester Road, St. Louis, Mo.

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.

The Indestructible Press with an Irresistible Pressure



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Sand-Lime Brick Plants, Shale and Clay Brick Plants

ARE ALSO SOLE MANUFACTURERS OF THE

Ross-Keller Triple Pressure Brick Press

The strongest and most efficient Brick Machine made, and the only Press that gives three distinct pressures to the brick

ROSS-KELLER TRIPLE PRESSURE BRICK MACHINE CO.

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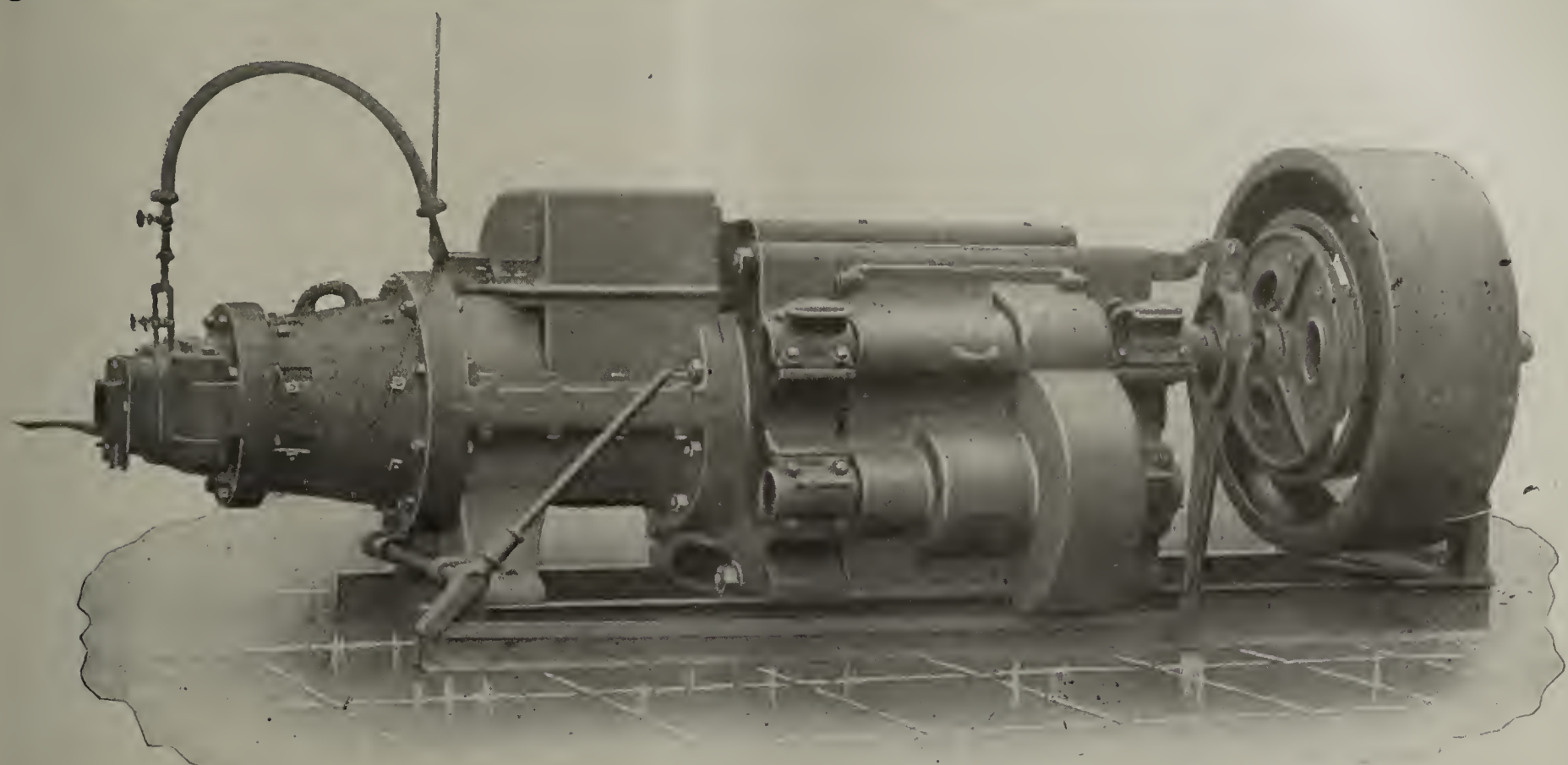
"Freese" Brick Machines



We build these Machines in ten sizes—Capacities to 15,000 brick per hour—also Pug Mills to suit.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build the original "Union" Machines with Pug Mills combined.

Don't forget our Automatic Cutters. THEY GIVE SATISFACTION.

State your requirements and let us furnish particulars.

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HORIZONTAL BRICK MACHINE

Built Entirely of Iron and Steel.

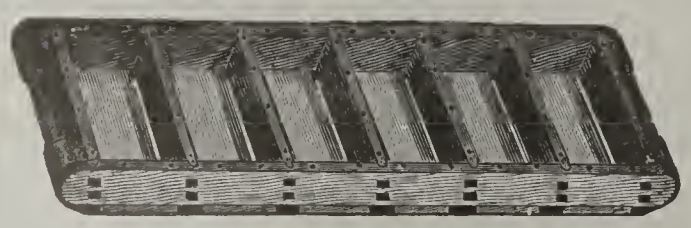
The only machine of this class having Steel Gear and Steel Shaft.

Built of the Best Material by the Best Workmen.

Simple, Strong and Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

THE LEADER OF ALL SAND MOULD MACHINES.



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We manufacture a complete line of Brick Yard Supplies. Write for prices.

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As Manufactured by Potts

Are the best and most complete machines. Where the clay contains limestone, the Disintegrator will separate the large stones and the Crusher pulverize the small ones.

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RING OILING BEARINGS

STEEL SHAFTS

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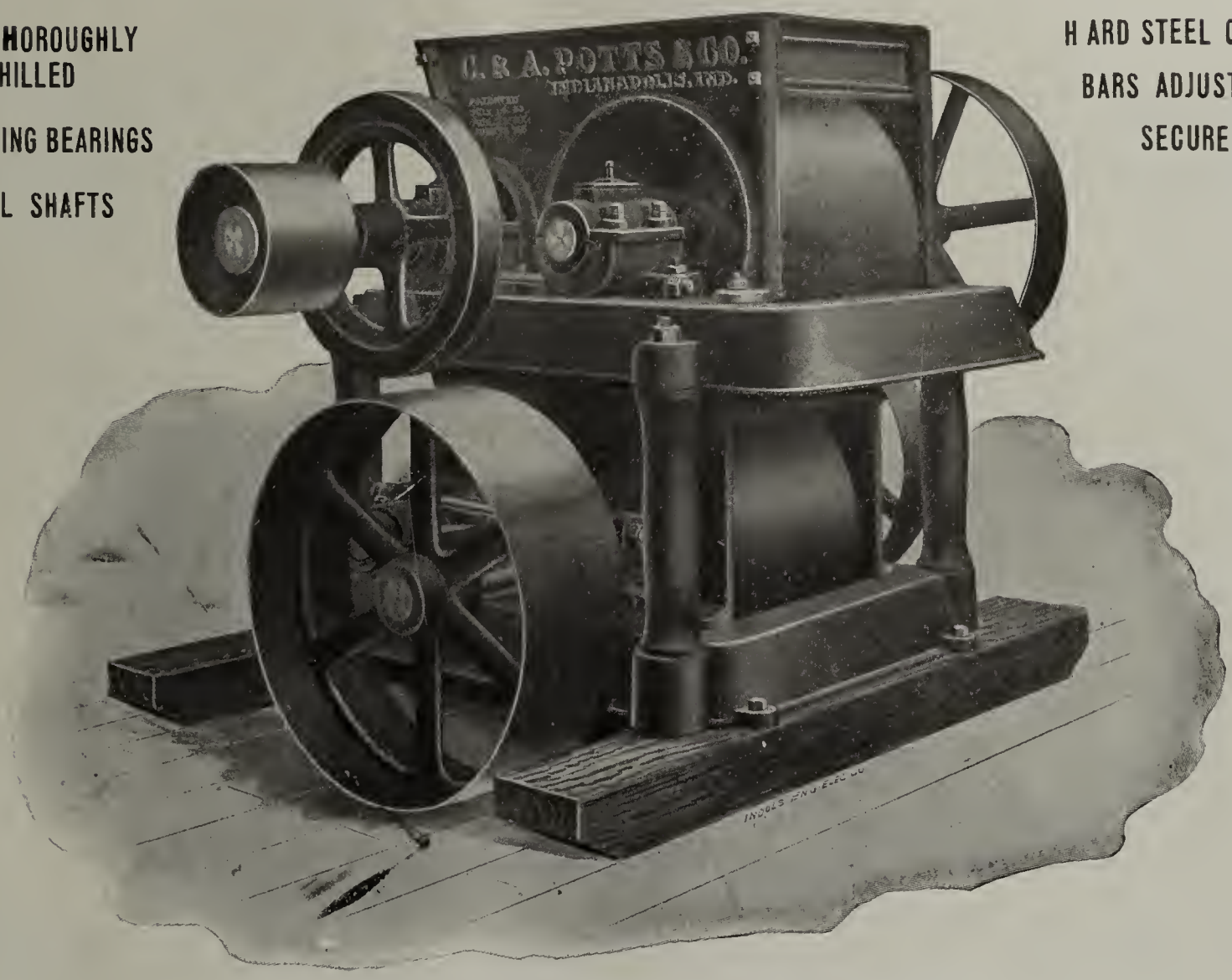

Compound Disintegrator and Roll Crusher
These Machines are made only with RING OILING BEARINGS.

Potts Disintegrators will work the clay direct from the bank.
Will not choke or clog from hard, dry or wet, sticky clays.
The MOST GENERALLY USED Machine on the market.

Built to Do the Work

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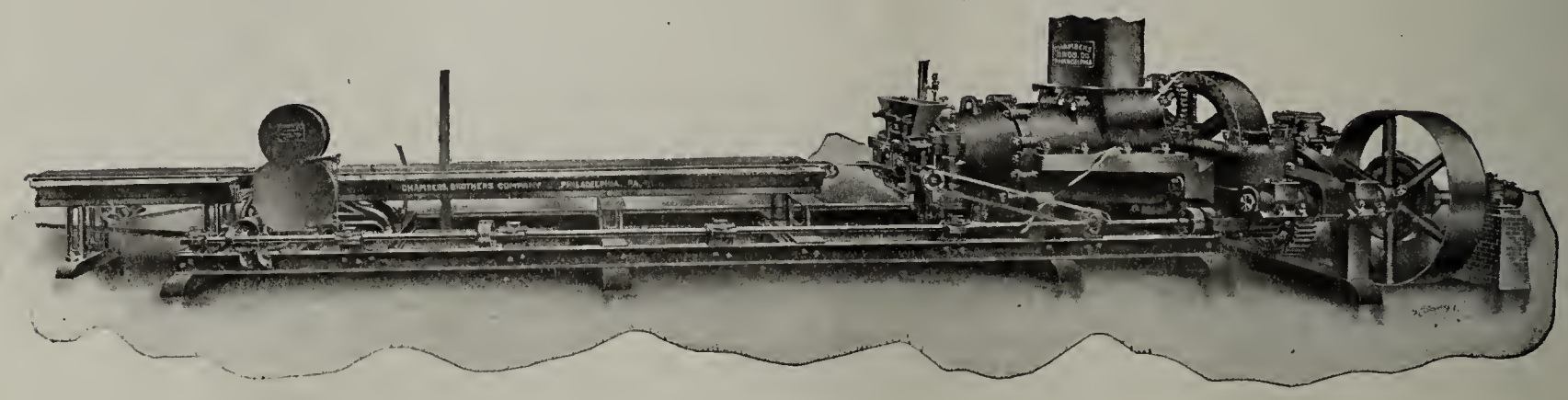
INDIANAPOLIS, IND.

Chambers Brick Machinery



Strong, Heavy Machines with Steel Pinions and Shafts; Stone Extracting Crushers, Five Sizes Disintegrators; Dry Pans; Single and Double Shaft Mixers and Pug Mills; New Pattern Clay Elevators.

Manufacturers of

THE KEYSTONE DOUBLE DISINTEGRATORS

For Grinding Tough Clays in which Small Stones may be Imbedded

Chambers Brothers Company

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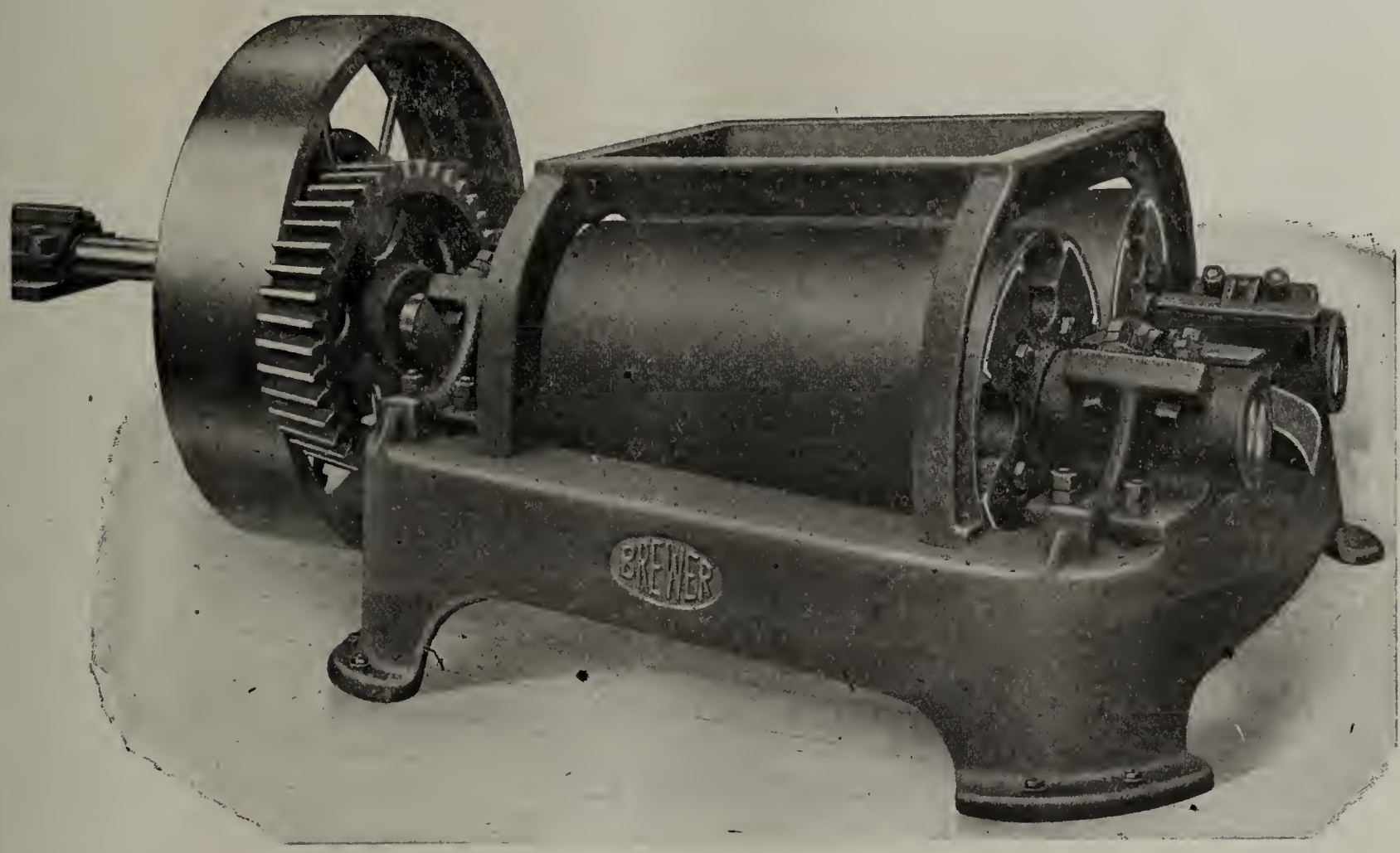
CLAY CRUSHERS

Brewer Crushers are built in a great variety of kinds and sizes. There are Conical Roll Crushers, Straight Roll Crushers, Beaded Roll Crushers, Disintegrators, Compound Disintegrator Crushers and Dry Pans. All in two or more sizes and high-grade construction.

Do you know about Brewer Crusher Rolls with removable white-iron shells? Our catalog describes them.



The Specifications Tell the Story

Here is a Conical Roll Crusher, the No. 21. It weighs 6000 pounds. The rolls are 32 inches long, tapering from 22 to 18 in diameter, and have removable white-iron shells. The gears are 5½ in. face. The journals are 12 in. long. The shafts are 4 in. diameter. No springs behind the rolls but the crushing stress is taken by draw rods which will yield before the safety of other parts is jeopardized.

If Marked BREWER It's Good

Our catalog explains all about them and gives detailed specifications

H. Brewer & Co.

TECUMSEH, MICHIGAN

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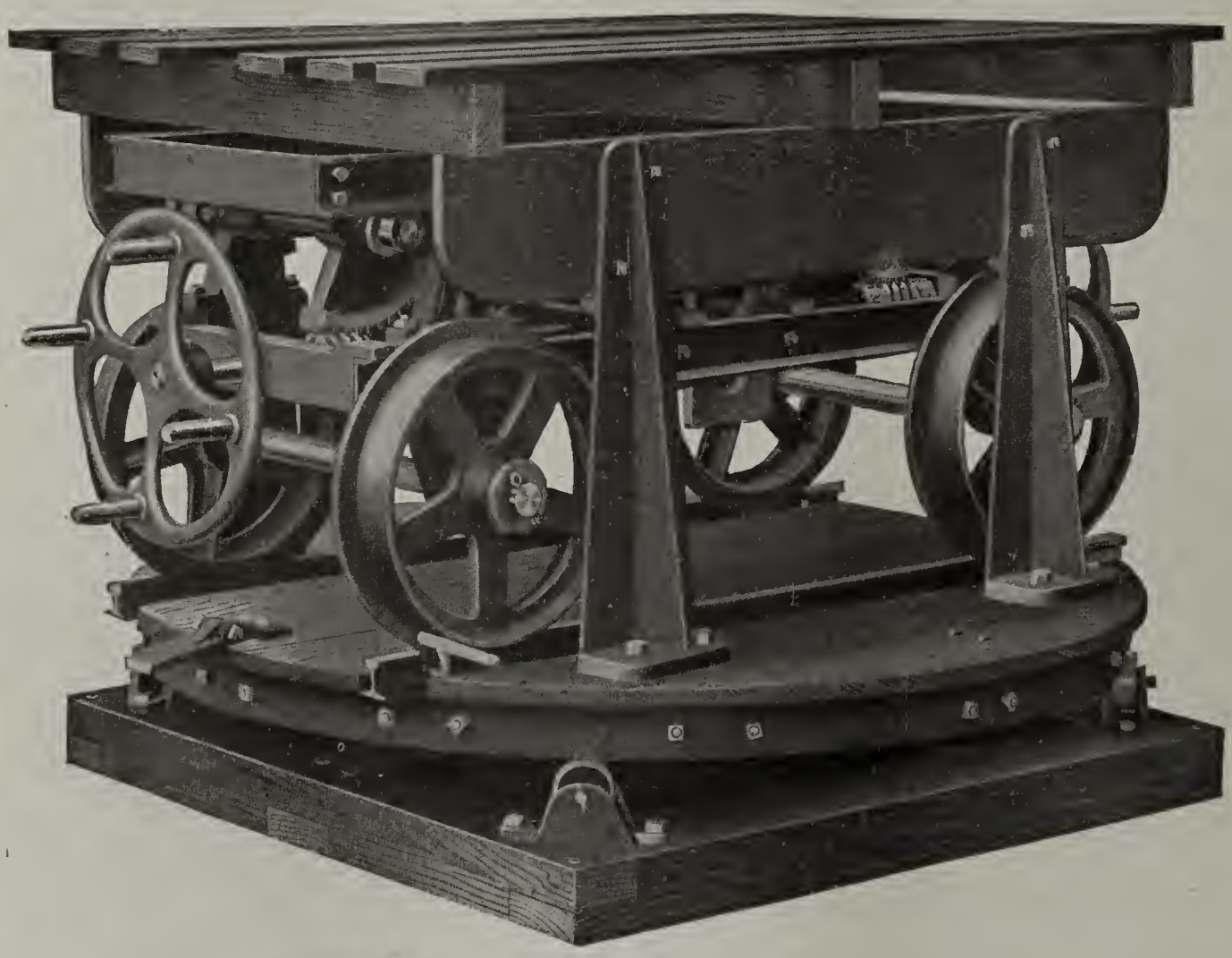
THE GUILDER ELEVATING AND LOWERING BRICK CAR

And Turn Table Used with Same

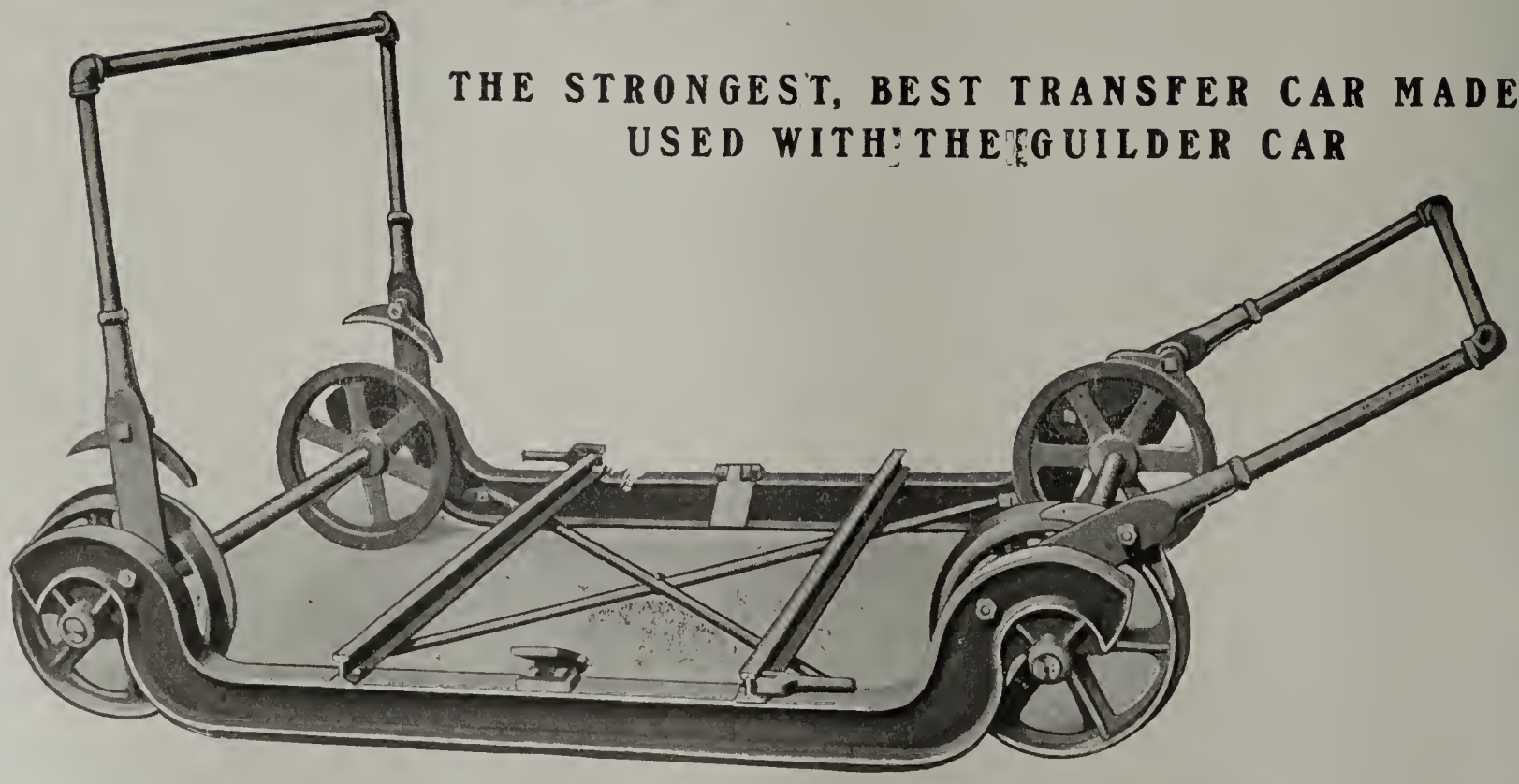
The most perfect car of the kind made. Easy to handle. Operated from either end. All iron and steel. Raised and lowered by Worm Gear and Segment.



No Charge for plans or for the right to use this system.

Pay only for what you get and nothing for a piece of "Blue Sky."

THE STRONGEST, BEST TRANSFER CAR MADE USED WITH THE GUILDER CAR



Write to the J. D. FATE CO., Plymouth, Ohio, about this system

CLAY RECORD

Entered as Second-Class Matter January 25, 1893, at the Post Office at Chicago Ill., under Act of March 3, 1879

Vol. XXXV. No. 6. CHICAGO, SEPTEMBER 30, 1909

Semi-Monthly, $1.00 per Year
Single Copies, - 10 Cents

THE PREPARATION OF SURFACE CLAYS.*

By Permission of the Director, U.S. Geological Survey

A. V. Bleininger, Pittsburg, Pa.

Continued from last issue.

Another point in connection with the burning of lime clays might be mentioned. Although clays of this kind contain usually a considerable amount of iron oxide which we know to be the source of the usual red color of bricks, yet these materials do not burn red, but assume a buff or cream color, which, when carried to vitrification changes to green. This is due to the fact that lime undergoes some chemical reaction with the iron which makes the red color. It is very easy to prove this point by extracting the lime from the clay by means of some weak acid. On burning the clay thus treated it will be found to burn red.

Lime, no matter whether fine or coarse, affects the drying properties of clays favorably. This is due to the fact that the limestone is non-plastic and acts like so much sand. The drying necessarily is affected more favorably by the somewhat coarser grains than by the extremely fine particles.

Again resuming our study of the residue remaining on the sieve we observe still another kind of mineral particles which are conspicuous for their well-defined crystalline development and by their softness. We may find fragments or even large crystals of beautiful symmetry, which are easily cut with a knife. A simple chemical examination will show that this mineral is gypsum. It is a hydrous sulphate of lime. This mineral, however, is usually not found in such large amounts as the limestone or fine lime, although there are cases in which several per cent. of it may be present. In drying, this material behaves something like any other non-plastic substance, but owing to its small amount exerts no special effect. In burning, unlike the carbonate of lime, it is not a flux in the sense of the latter since it is not decomposed by heating, owing to the fact that sulphuric acid is united powerfully with the lime and cannot be expelled at the temperatures within reach of the brickmaker. The result is that these particles of gypsum remain as inert material and do not become active in the vitrification of the clay. However, it is by no means a harmless constituent. Gypsum is soluble to the extent of one part in about 440 parts of water. In making up the clay with water in the pugging process some of this gypsum is dissolved and the dissolved salt during the drying process is carried to the surface of the ware. There it will remain as a wet crust which is not removed by burning. Of course, the extent to which this takes place depends upon the amount of gypsum present, the character of the clay, and the length of drying. Furthermore, the undissociated sulphate of lime present in the burnt brick on coming in contact with the water which seeps into the brick while in a building will in time leach out to the surface. In this case we have a common case known as "whitewash," and it is the gypsum which is at the bottom of this difficulty. If enough gypsum is present in the clay it may even be injurious to the strength of the brick, inasmuch as the dissolved salt may concentrate in one part of the brick or the tile and crystallize out in that portion. On crystallizing it will increase in volume and this volume change may give rise to spalling similar to the action of the lime. Nearly all of the whitewash we observe in our buildings is sulphate of lime, and hence where clean colors are desired, it is obvious that a clay should be used as low in this compound as possible. In many clays the amount of this constituent is so great as to prohibit their use for the manufacture of face brick.

Let us now examine into the material which has passed the 200-mesh sieve. The first thing we observe is the fact that it is much more plastic and sticky than the sediments retained in the sieve. At the same time we notice that it is of a more uniform red color, showing that the iron oxide, which is the cause of the red burning clay, is distributed throughout the mass and appears to be present in a finely divided state. Closer examination still reveals also the presence of a considerable amount of fine sand and perhaps also of some of the mineral already discussed. We could bring about a still further classification or sizing by carrying out the so-called "mechanical" analysis, and in this way we would finally obtain a sediment which would be composed of the real plastic constituent of clay in as undiluted a state as it is possible to obtain it. These very fine sediments therefore constitute the plastic base of clay. But let us not assume that we are here dealing with a definite material. No matter how completely we carry out the separation of these very of an aggregate of plastic jelly-like particles admixed finest grains we shall still observe that they are made up with microscopic grains of sand and minerals. Of course this fine sediment will show far greater plasticity and shrinkage than the clay as a whole. What then constitutes the character of this plastic base? Evidently the peculiar fact of plasticity is inherent in the physical constitution of this aggregate. It is jelly-like and has been

*Read at the 1909 Meeting of the Wisconsin Clay Manufacturers Association.

called "colloidal" since it is very similar to many jelly-like substances found in nature or artificial compounds to which the term "colloid" is applied. We are here dealing with a cellular structure resembling very much the structure of a sponge and which, similar to the latter, absorbs water and holds it between the particles with great tenacity. The more of this colloidal material a clay contains, the more plastic it is said to be. This is indicated also by the greater amount of water required to pug a plastic clay. We know from experience that the more plastic a clay is the more water will be required to make it workable, and this may serve as a rough guide in estimating the amount of the colloidal clay substance. Likewise, this clay base holds on to its water very vigorously, even after being heated to the boiling point of water. Thus we may determine approximately the amount of this plastic substance by finding the weight of water which is retained at temperatures above 212° Fahrenheit.

Since we are here dealing with a cellular structure in which the capillaries are extremely fine, it is reasonable to suppose that the drying is bound to be rendered more difficult; the more of this clay base is present in the clay and the more plastic the latter is. This may be carried to such a degree that it may be almost impossible to dry a clay without checking or cracking since the strain produced by forcing the water through the extremely fine capillaries is so great that the material does not possess sufficient strength to withstand it. Hence, the difficulty of drying exceedingly fine grained plastic clays which is known to every clayworker. Speaking from the practical standpoint a well-working clay ought to contain only so much of this plastic and colloidal constituent as to cement the grains of sand and other minerals together and to sustain the load placed upon the ware in the kiln. When this is the case little trouble is experienced in the drying and in the water smoking. Very plastic clays give considerable trouble during the water smoking and we are often only too prone to neglect this important point. We are very apt to hasten the water smoking, during which process the hygroscopic water, that is, the water which is driven off at a temperature above the boiling point, is expelled. Failure to water smoke exceedingly plastic clays carefully will cause great strain in the body of the ware owing to the violent expulsion of the water inclosed in the cells of the colloidal substance. The result then is a weakened or rotten structure, which is indicated by the absence of ring.

As to the effect of this plastic clay base in burning we must realize that it is the true hardening and cementing mixture. It is the one which gives us the desired strength and which furnishes the principal part of the clay bringing about vitrification. At the same time it also gives the clay its red color unless it is masked by the presence of an excessive amount of fine lime.

In regard to determining without actual trial whether or not a clay sufficiently plastic to flow through dies properly or whether it possesses this property in a sufficient degree for other forms of moulding, we have as yet no fixed test. Of course, some idea of the plasticity of clay may be obtained by the feel of it, its drying shrinkage, the amount of water taken and held in a plastic state; but we have no means of determining the degree of plasticity accurately and expressing it by means of a numerical value. Several methods have been suggested, such as the absorption of coloring agents by clays, the determination of the viscosity of clay slips, the tensile strength of plastic and a dry clay, etc., but the subject has not as yet been covered thoroughly.

The clay substance may also assume a variety of modifications by virtue of the geological changes to which it has been subjected. Thus we have clays of the type of the joint clay, common in Illinois, Wisconsin, Minnesota and other states in which glacial action has produced a structure which is excessively colloidal and at the same time appears to have certain lines of cleavage which are almost cubical in their arrangement. Clays of this type cause a great deal of trouble to many manufacturers.

In the preparation of clay for the manufacture of clay wares it is the purpose to reduce the clay to a condition in which it may be worked easily in a machine, dried safely and burned to a hard product. While with normal clays this is not a difficult task, trouble is experienced with many of the materials in which one or the other of the mineral constituents of clay is in excess throwing the character of the clay out of balance. In this connection we might consider this subject under the following heads: 1st, clays with an excess of coarse sand and other mineral debris; second, clays with an excess of fine sand; third, clays with an excess of lime, either coarse or fine: fourth clays with an excess of plastic base or with inherent excessive plasticity; fifth, clays containing too much gypsum.

1. The glacial clays of Wisconsin only too often contain coarse rock of all sorts, from granite boulders to pebbles of limestone or sandstone. It is not difficult to remove the larger material by hand picking, but the difficulty is met with in dealing with irregular pieces from the size of the fist down to pebbles of walnut size coated over by moist clay. The question is what kind of mechanical treatment should be adopted in such cases. As a rule the clay as it comes from the bank is too wet to be worked economically by the dry pan, or the hammer disintegrator, and the larger pieces of hard rock would make the use of the latter machine too risky. The roll crusher would be the most available machine for this purpose, but it also is not a satisfactory apparatus for many clays, since the ordinary stone separator used in connection with it is very unsatisfactory. The difficulty might be met by the use of very powerful rolls which are not yet employed in the clay industry. In Europe an attempt is made to meet these difficulties by using a machine which forces the clay through gratings which retain the coarse material, allowing the clay and finer sand to pass through it. The coarse material collected is discharged at intervals by opening a door on the side of the machine. Another way of preparing these materials employed in Germany and France consists in the use of a heavy wet pan provided with large slits through which the clay is forced, while the coarse material is retained in the pan and must be discharged when the bulk becomes too great for operating the machine.

Right here is the place where new devices and machines might be adopted. A promising apparatus used extensively in the cement industry and only to a limited extent in the clay industry is the rotary drier. It is simply a rotating iron tube about 40 ft. long and slightly inclined, the clay being fed in at the upper and a furnace located at the lower end. The clay is dried by the heat of the gases of the furnace. The drier of this type will have a capacity of about 15 tons of clay per hour, and would require about 5,000 lbs. of coal per day of 10 hours. The power consumption would be from 8 to 12 horse power, and the cost of the apparatus including installation would probably be somewhat above $4,000. The treatment of the dried clay would be a far simpler proposition than the preparation of the moist material. This drier might be followed by a modified disintegrator with hinge bars revolving within a shell composed of coarse screen plates. The action of this machine would be to whip the dry clay off the stones and pebbles and at the same time to allow of the ready removal of the coarse material. It could be

operated either periodically, the pebbles being removed by tilting the cylinder and opening the hinge door, or continuously making the cylinder longer and feeding and discharging the clay and pebbles uninterruptedly. In some cases the gravel removed in this way might be made a source of revenue by selling it as gravel for concrete work. After leaving this machine the clay would then be conveyed to a regular disintegrator, thence to a screen, and finally to the pug mill. It might be said that such a plant would cost much more money than the usual equipment for a soft or stiff-mud plant. This is undoubtedly true, but the advantages gained would be:

1. Production of a better quality of ware;
2. Independence of weather conditions;
3. More uniform conditions of manufacture.

Such a procedure is about the only way of utilizing certain clays which otherwise would be out of the question.

Where a clay contains an excessive amount of sand which appears in various sizes of grain, it is frequently possible to improve the clay by drying, disintegrating and screening it in such of the machines as are on the market today, thus removing a certain amount of coarser sand.

2. If the sand is fine enough to pass that smallest permissible size of screen and the amount of it so large that it seriously impairs the working quality of the clay, making it too lean, we are confronted with a more difficult proposition as, in this case, there is no practical way of removing the sand since the slumming process is out of the question in a climate such as we have in the State of Wisconsin.

This fine sand will give trouble in making stiff-mud brick and in drying. If the difficulty occurs in moulding the brick, the stiff-mud process may have to be abandoned, and either the soft-mud or the dry-press process adopted. If the drying results in loss we shall have to carry on the drying with the greatest care by keeping our hacks or sheds well protected from the wind or the sun and thus drying more slowly, or by using a long tunnel drier in which the steaming zone is extended considerably over the usual length. In very troublesome cases the periodic or chamber drier, such as the old Bucyrus and other driers, must be employed, in which the drying process is under absolute control. Again the adoption of the dry-press process might in some cases solve the problem most satisfactorily.

3. As we have seen above, the carbonate of lime may be present in clay either in the form of pebbles or as an exceedingly fine material, or in both conditions.

We must either remove the pebbles or we must include them by fine grinding. The pebbles may be removed, as has been suggested, for the rock debris, or they may be crushed so fine that at least the trouble caused by the bursting and spalling of the brick is done away with. Wherever possible a combination of the two should be adopted, removing as many of the coarser pebbles as possible, and grinding the remaining ones, so that they will give no difficulty. In this case no compromise should be made. If grinding is done, it should be done thoroughly. Probably the simplest procedure in this case would be to dry the clay and then crush it in the dry pan, followed by screening. By the use of such a thorough method of separation the problem of handling calcareous clays would be solved in such a way that a high-class product could be produced, and at the same time the troubles of the manufacturer practically eliminated. The fact should be emphasized also that a shed for storing clay is of the greatest possible value to every brick plant as far as quality and uniformity of the products is concerned, to say nothing of the benefit derived from having clay stored ahead in larger quantities. Every brickmaker realizes how surface clays differ in composition and physical properties even for short distances. For instance, if we have a 6-ft. deposit of clay low in lime and say 3 ft. of a more calcareous clay, and it is not possible to separate them, it is exceedingly important that the two clays be thoroughly mixed so that the more limey clay really does not represent more than one-third of the entire clay. On working directly from the bank it happens only too often that the limey portion at some time or another makes up a far larger proportion of the brick than it really represents in the bank. All the properties of the brick in manufacture would vary accordingly. If we keep as large a stock pile of clay in the shed as possible, spreading the clay brought in from the bank in layers and working straight down through the pile, we could be reasonably sure of working with an average clay mixture and hence no abnormal variations in results need be feared.

4. Sometimes the brick manufacturer is obliged to use a surface clay which is so exceedingly plastic that it gives trouble in drying. An example of this we observe in the so-called "joint-like" structure, thus bringing about great loss. Many factories have been compelled to abandon these clays. In some cases this state of affairs may be remedied by mixing sand with these clays, although this is not always possible owing to the great distance to the nearest bank. In some cases even sand additions do not help, owing to the fact that the joint structure of the clay itself is not destroyed and the clay is simply diluted. Usually these clays may be made workable by weathering or drying. If these clays are dug in the fall and are exposed to the frost of one winter they frequently become quite workable in the spring. Again, by ditching into this clay so that without digging the bulk of it the frost will be caused to penetrate sufficiently deep so as to improve its character. Drying the clay in the air either outdoors or in sheds improves the behavior of the clay considerably, though not always sufficiently, but drying at higher temperatures, for instance at 400° F. has been found to bring about a radical change in the nature of the clay so as to make it workable. In one case the drying loss was reduced from about 30 per cent. to less than ½ per cent. The rotary drier might also be made useful in this respect, and it may offer a solution to the problem of working so-called "joint" and similar clays successfully.

5. Clays which show the troublesome and annoying whitewashing might be helped in this respect by the addition of clean sand to the clay, by rapid drying, by coating the face of the brick with an impervious combustible mixture or burning it to a semi or completely vitrified body. In the case of the high-grade bricks, such as face brick, barium carbonate, or chloride may be added to the clay.

Sand assists in reducing whitewash by making the clay more porous, thus accelerating the evaporation of the water which means, of course, that not so much of the salt will be carried to the surface in the shorter time. The same principle is involved in drying rapidly. In some European plants the face of the column of clay as it issues from the auger machine is coated with an impervious coating like tar, carbolated flour paste, etc., which is applied automatically, and prevents any evaporation of water on that side, and hence also the appearance of whitewash. This coating burns off in the kiln and leaves a clean-colored face. Hard burning naturally breaks up the salts and causes them to be absorbed in the clay by chemical union, and we need fear no whitewash from vitrified bricks. The use of coal lower in sulphur will greatly contribute towards the elimination of whitewash arising during burning, as well as the practice of setting the bricks in the kiln perfectly dry. The use of barium compounds in this connection in the mixture of the better

grade products is too well known to need further description.

It might be well in conclusion to discuss the question of preparing clays from the ideal standpoint. On comparing the chemical composition of our clays with the composition of granites we find that they are strikingly alike, and it is an actual fact that we can convert our clays into igneous rocks by sufficient heat treatment. But we can do better than this. We know that granites possess a crystalline structure which does not give them their greatest possible strength. Hence, in producing a new, almost indestructible material in the shape of our bricks it is important to make the clays as homogeneous as possible. We must destroy the original clay structure and create a more uniform one in its place. Therefore, our materials should be disintegrated and pugged thoroughly. Especially the latter process should be watched closely, as there is yet a great deal of room for improvement. If we observe the pugging as carried on in many yards we are not surprised to see the product succumb to frost. The clay is forced through the machine so rapidly that only part of it is really softened, while a portion remains hard until it goes into the drier. Again, so little attention is paid to the adjustment and proper repair of augers and moulds that lamination and other defects occur with great frequency. It is, hence, not surprising that lamination and other structural defects occur which tend to weaken the product.

The most durable building material known is burnt clay, but in order to bring out its best qualities and in order to assert its superiority over concrete our clay products must be made as well as it is possible for us to make them. If this is done we need not fear competition with other structural materials.

GLASS BRICKS NOW USED IN BUILDING

The latest novelty in building materials comes from Germany, where glass brick for building purposes have been used with some measure of success. In Berlin is constructed a small villa, the walls of which are built of glass brick of several shades of dark green and blue.

The glass brick are especially adapted to construction where light, cleanliness and neatness are particularly in demand. In Hamburg they are utilized in place of windows. They admit light in walls which police regulations require to be of fireproof and windowless.

In addition to admitting light to dark hallways, rooms, etc., they are said to possess the same strength as ordinary clay brick. They are also utilized in walls in yards and partitions in the interior of houses, salesrooms, offices, workshops, etc., as well as for the construction of verandas, hothouses, kiosks, bathrooms, hospitals, ice factories, butcher shops, railroad stations, breweries, stables, and in other places where cleanliness, light and uniform temperatures are especially desired.

The brick are also made with a wire coating for fireproof walls. In some of the recently erected buildings in Milan, Italy, brick made of glass have been adopted for ground and floors on account of the light obtained. They are also coming into use for partition work in some of the hospitals on account of hygienic principles.

In one of the leading banking institutions of the city of Turin the lobby office floor, which is about 36x58 feet, is entirely paved with glass brick and laid in iron frames for the purpose of admitting light into the basement, where are located numerous private boxes and vaults. In the Netherlands hollow green transparent glass brick are used principally for light-giving purposes in machine shops and conservatories.

INTERESTS OF THE ARCHITECT AND OF THE BRICK MAKER DRAWING CLOSER TOGETHER AS MODERN CONSTRUCTION DEVELOPS.*

By F. W. Fitzpatrick, Washington, D. C.

Primarily, or perhaps we should say fundamentally, the brick manufacturer is interested in the material as a purely commercial proposition. He has invested a certain amount in a plant and it is up to him to keep that plant at its full capacity in order to get therefrom the greatest return upon his investment. We, the architects, are interested in brick as simply a unit, one of many used in the expression of our ideas, in the materialization of our designs. In those two basic viewpoints our interests are dissimilar, but immediately thereafter they draw closer together. We want the very best thing we can get, and it is to the manufacturer's interest to come as near supplying that demand as he possibly can. Some would have us believe that there is inborn antagonism there, a sort of distrust of each other, the one ever scolding and demanding something better and the other yielding just as little as he possibly can. This is the wrong view. The closer the architect and the manufacturer get together and train themselves to think with each other, so to speak, the better is it for them both and for the buildings, the art that yields them both not only their bread but the opportunity to develop, to attain eminence.

There were makers of brick at a very remote period in the history of men, perhaps even before there was any need of architects. The monuments of stone and of marble have decayed, have become utter ruins and the story they tell us in their hieroglyphics and pictured carvings are well nigh obliterated, but the work of the potter, the maker of tiles and of bricks, has been preserved to us in almost perfect condition and from far distant times. The buildings may have crumbled on account of disintegration of the mortar used in the joints of such brickwork, but the clay work itself is intact. See what has been unearthed at Babylon and Ninevah and at Thebes and look at the splendid work in tile and in brick still standing in all its pristine perfection in Persia and Assyria and in India and in the early Christian examples of architecture at Byzantium and the other Roman dependencies. Surely we have precedent enough not only as to how to make brick that will last, but how we may put these brick together in most artistic form in architectural masterpieces.

In ancient times there were rather sharply drawn lines in the use of materials. Geography and geology had much to do with the establishment of these demarcations. In places where stone was found and was easily quarried, stone, of course, was the most used material; in the neighborhood of great forests wood came easiest to the hand of man to be fashioned into habitations and shelters, and then in regions in which neither timber nor stone was plenty man quickly learned to make unto himself a building material from the clay of the soil, molding it with his hands and letting the sun harden it into permanent form or burning it with the straw and refuse of his cultivated fields. In our own time and land the history of brick has been most interesting; its career may be said to have been checkered, but it has succeeded in making a place for itself that is unassailable and most eminently respectable. At first in Colonial times it was a luxury and brought here from the mother country at great cost, and each brick was as precious as a drop of its owner's blood and as carefully guarded. The theft of bricks was a very serious offense indeed and punishable with the severest penalty. Then our fathers began to make brick themselves, rather crude affairs, but, laid up with a wide

*Read at the 1909 Meeting of the National Brick Manufacturers Association recently held in Rochester, N. Y.

joint, the effect was quite artistic. Later, for awhile everything had to be of stone. A man must indeed be of common clay if he abided in but a brick house. Stone and marble were the proper caper, and if he couldn't afford them, why he stuccoed his brick and jointed it up in beautiful ashlar, or he built of wood, but it was to imitate stone with joints and everything most painfully copied. In our own times brick was revived; there was a species of Renaissance, but it was only used for secondary buildings, as we might call them; the really monumental affairs had to be of granite or stone or marble. But those secondary or commercial buildings were of more or less importance, and though we couldn't afford to make them of marble or stone or granite, we craved something better than ordinary brick, and so pressed brick came into vogue. Kilns were carefully picked over and each building presented a most uniform appearance, the bricks all of an exact size, with the narrowest imaginable joint and of precisely the same shade in color—you can still get exactly the same effect by whitewashing or kalsomining a wall surface. It was painfully beautiful. Some thought that galvanized iron and such ornamentation wasn't quite the right thing, and so the brick work was ornamented per se. Bands of black brick were introduced, little spots of other color were injected and dog-tooth effects were everywhere. Then we had molded brick, but the desire was always to get something that looked as nearly like stone as possible. We seemed to realize and properly appreciate that brick was only used as a substitute, something cheaper than what we would like to use, and it was up to us to make it look as much like the real thing as we could.

It has only been within the last ten years that brick has really come into its own and has taken its proper place among the available media architectural. Our architects have found that granite and stone and marble buildings, where at all exposed to fire, have been cruelly spalled and damaged. They realize that in our highly combustible cities pretty nearly every building they erect is exposed to a greater or lesser fire hazard on account of its neighbors, and they have found that brick best withstands fire. It has also dawned upon them that much expression can be obtained with brick, and latterly they have used the material from preference, selecting it regardless of price instead of granite or marble or stone! The old notion of uniformity of color and great exactness as to shape has given way to the saner adaptation of rougher forms and varying tints. It is simply surprising to note the beautiful effects that can be obtained in brickwork today. In a stone building elaboration of ornament and panelings and moldings are necessary or the mass of a building becomes brutally heavy and uninteresting. An architect generally fights shy of much plain wall surface in stone. In brickwork just as great a variation and seeming elaboration can be obtained, plays of light and shadow, and at infinitely less cost than the carvings and moldings in the stonework, and at the same time a plain wall surface is sought for by the artistic designer. If there is no occasion or reason for his diversifying that wall in the flat by diaper work an dartistic jointings, the crude plain wall surface itself is most effective and prettier far than an equal surface of any other building material; there are finer gradations of tint in it than in any other material save possibly some of the very expensive foreign marbles, and these latter in large masses weary the eye.

Usually it has been the architect who created the demand for certain kinds or forms of materials, but in the case of artistic brick the manufacturers have taken the initiative and produced the material first and offered it to the architect, much to the latter's pleasant surprise, and it has taxed him to apply that brick in one-half of its possibilities of artistic effect! There is a rather unfortunate tendency toward ultra-specialization in materials. The concrete enthusiast wants his house entirely of concrete. If he could only get it transparent enough, he would have it in his windows; the glass people have had in mind a building entirely of glass, with fittings and furnishings of glass, everything of glass whether it would best suit the purpose or not, and so it goes. I believe in a judicious combination of materials, each one in the place for which it is best suited, therefore am I not clamoring for a brick roof, briek downspouts and brick window sash, but I do believe that there are yet endless, almost unthought of, possibilities in brick construction that for the best interests of architecture, let alone the brick manufacturer, we should seek to develop, to bring forth, to discover or to perfect.

The way to bring a thing about is to make it interesting for those whom we are seeking to interest. That seems to be one of the first principles of life. So, why would it not be a good idea for the brick manufacturers, the clayworking associations, to inaugurate a series of competitions among the architects for artistic effects secured in brick construction? The Brick Builder has done this to a certain degree in its splendid competitions for theatres, libraries and so on entirely of terra-cotta or terra-cotta and brick, but what I would like to see would be the development of problems in domestic architecture. There is where brick can be used to splendid advantage. The bigger problems will find themselves, so to speak, but the brick house of modest dimensions, as well as that of greater pretensions, is still in embryo. We have done some mighty effective work in that direction, but it is here and there and with wide intervals between. What we ought to have are some competitive designs for narrow front row houses, detached cottages, suburban houses, etc., etc. Designs showing how the decoration and cornices, the "features" of such buildings, can all be brought out in brickwork. In the present order of things there is too great paucity of expression. In our ordinary rows of city houses there is a wall with a bay window at certain intervals and so many holes left for windows. These openings are capped with stone and there is a galvanized iron cornice at the top, and there you are. Our younger architects at least would jump at the chance to show what they can do with so adaptable a material as is brick for just such domestic architecture.

If the brick manufacturers will club together to raise a reasonable amount for a few attractive prizes, I am sure that through the intermediary of the clayworking journals a most interesting series of competitions can be brought about, and with results that will redound to the greater glory of a material whose potentiality has been but half developed, and to the advantage of an art that challenges the best within us.

CONCESSION IN VENEZUELA FOR TILE FACTORY.

Consul Isaac A. Manning reports from La Guaira that the Venezuelan minister of commerce has made a 10-year contract with Miguel M. Herrera, of Valencia, under which the latter agrees to establish, within 18 months, one or more factories for the manufacture of porcelain and glazed ware, including floor tiles and fancy finishing tiling, and excepting ordinary earthenware, which is already being made in the country. Herrera must use prime material found in the country, such as kaolin, etc., and must make use of the greatest possible number of Venezuelans among his employees.

CLAY-PREPARING MACHINERY.*

By W. D. Richardson, Columbus, O.

The importance of the proper preparation of the clay is not sufficiently appreciated by American clayworkers, especially by those making structural products. One of the most noticeable features of European brick plants to an American is the greater amount of clay preparing machinery used there. It is true that the tendency in this country is to a more elaborate preparation of the clay and one sees less frequently now the former American practice of dumping the clay direct from the bank into the brick machine, yet it is evident to any close observer that we have still much to learn of the advantages of better clay preparation. It is only the intelligent, thoughtful man of long experience who recognizes that the secret of a high-grade product lies largely in the preparation of the clay.

The ceramic engineer who is called upon to investigate a faulty product—the damage appearing in the drying or burning and being generally attributed to improper conduct of these operations—often traces the source of the trouble to inadequate preparation of the clay and is able to prescribe a remedy. In many cases a large investment in a brickmaking or other clayworking plant has been sunk because the managers had not learned how to prepare their clays. There are clays that have been pronounced worthless because of the inability of those who have tested them or worked them to properly prepare them for the molding of the product. Some instances of this will doubtless be pointed out by Prof. Bleininger. He will also doubtless discuss the changes in the clay brought about by proper methods of treatment to prepare it for the product to be made. It is my purpose to only present to you a review of the machinery and appliances used in making the preparation of different clays for different products.

This presentation is not made with a view to describing machinery with which the members of this association are not familiar. On the contrary, it is assumed that you are sufficiently familiar with clayworking machinery to understand a brief description, since I have not had the time or opportunity to make such drawings as I ought to have for illustration. The purpose of this talk upon clay-preparing machinery is to supplement Mr. Bleininger's paper and to help some who may want to decide upon the best method of preparing their clay and the best machinery to select for the purpose.

The first information desired in the selection of clay-preparing machinery is the character of the clay and the kind of product that it is desired to make from it. The character of the clay that is to be worked can only be determined by careful examination of average samples taken from top to bottom at different places over the deposit to be worked, and by a more or less thorough test of these samples. The things to be determined by these tests are:

Hardness or toughness of the clay in the bank.

Moisture in the clay.

Foreign matter in the clay.

Pebbles in the clay

Character of the pebbles—what percentage of them, if any, are limestone pebbles.

Residue left from washing and passing through screens of different meshes.

Character of this mineral residue.

Plasticity and bonding power of the clay.

Drying properties of the clay.

Tendency to scumming of the product in course of manufacture or to efflorescence of the burned product when exposed to the weather.

*Read at the 1909 Meeting of the Wiaconsin Clay Manufacturers Association.

Some or all of these characteristics of the clay affect more or less the method of preparation and the choice of machinery.

It is not within the scope of this paper to discuss the means employed to secure the desired information from the clay-testing. We will suppose that the characteristics of the clay have been fully determined and will briefly review the different kinds of clay-preparing machinery, noting the special adaptation of each.

Mixers and Feeders.

The main purpose of these machines is to hold one or more carloads of the clay and feed it constantly in a uniform quantity to some other machine. The mixing is generally a secondary object and is attained only incidentally. There are two classes of such machines—those for feeding coarse, raw clay to pulverizers and those for feeding the pulverized clay to pug mill or press.

In economical plants clay is now generally transported from where it is mined or dug to the factory in cars holding from one to two cubic yards. These cars of clay cannot be dumped directly into the pulverizer, disintegrator or crushing rolls without clogging or choking the machine and the dumping of the car upon the floor and feeding by hand shovel means an unsteady feed and hence a reduced capacity of the machine, as well as the expense for the labor employed. Therefore the need of a machine into which one or more cars may be dumped and which will feed the clay to pulverizer in a uniform manner as rapidly as the pulverizer will handle it.

There are various forms of such feeders, but in this country there are only two that are advertised, both using the principle of the screw. One of these machines is built on the lines of the ordinary horizontal pug mill, though sometimes set on an incline, having feeding knives on a shaft running in a sheet iron trough, with hoppered sides for holding the required amount of clay. This machine is generally misnamed a "granulator," probably from the fact that the feeding knives do to some extent cut up the large lumps. The other machine consists of a box, generally of sheet iron, in the bottom of which run four screws that convey the clay out of a gate in one end of the box. This machine is known as the Rust Clay Feeder. The screw running in a trough has long been used for conveying various materials, but has been found impractical with a plastic material like clay, on account of the large power required when the clay has built up and formed a hard lining of the trough, but the multiple screw conveyor running on a flat bottom has overcome this objection and proven to be very satisfactory.

For material that is not too wet and sticky, especially for had clay and shale in lumps, an endless chain can be used instead of the screws to carry the material out of the box or nopper, and in some cases is to be preferred to any other.

Another form of feeder that is quite generally used in Europe and that is coming into use in this country is the Rotary Disc Feeder. This feeder is made in different forms to adapt it to different conditions. The small power required to operate the rotary disc feeder, the small expense for upkeep, the uniformity of the feed and wide adaptability for all conditions, when properly modified, make this the most practical feeder for clayworking plants to date.

For making high-grade clay wares the structure of the clay, as generally found in the bank, must be broken up and the particles reduced to a fineness that will permit of its being properly tempered and moulded into a fairly homogeneous body. Where the clay is in a more or less moist and plastic condition, as in sedimentary

clays of recent origin, the class of machines suitable for its reduction are disintegrators, smooth rolls, wet pans, perforated rolls and pug mills.

Disintegrators.

This term is generally used to designate a pair of rolls, one a slow-running feeding roll and the other a smaller roll having a cutting surface and running at a high speed. It may be applied also to rolls of equal size and speed, having on their surfaces teeth or knives, but the disintegrating action is much increased when the rolls run at different speeds. The disintegrator should form part of the clay-producing outfit in every plant using soft, plastic clays. In many plants the disintegrator is the only clay-preparing machine found back of the brick machine or pug mill. In most cases, however, additional machinery would improve the product considerably. The additional machine that is most generally needed is the

Smooth-Roll Crusher.

This machine is capable of extended use in clayworking plants for preparing either moist or dry clay. Though it is a simple machine, yet I know of none harder to get of proper efficiency and durability. It must be said that most of the smooth rolls made for the clay industry in this country are of very little value. This is probably due chiefly to the necessity or desire of making a machine that can be sold at a low price. A good smooth-roll crusher is not a cheap machine. It need not be made of equal size or weight for all uses, but it should have the following features:

1. Rolls large enough in diameter to get a good angle of grip on the material.

2. One roll should have a lateral movement over the other or should at least be arranged so that it can easily be moved back and forth at frequent intervals by hand. This not only produces a rubbing or grinding action upon the material, but is an essential feature for keeping the surface from wearing in grooves.

3. In many cases the smooth-roll crusher should have no relief springs, but should be strong enough to grind any pebbles or rocks that may get into it. In fact an important use of the smooth rolls is to crush limestone pebbles in the clay.

By having two or more pairs of smooth rolls of proper construction set with decreasing spaces between the rolls, any clay may be prepared entirely by this means, provided, of course, that the clay is not too wet. We would use more smooth rolls in clay preparation if we could get such as we want.

For developing the plasticity of the clay, as well as for mixing clays and producing homogeneity, no single machine is equal to the

Wet Pan.

The only form of wet pan made in America is the solid bottom pan, charged and emptied intermittently by an operator, who is the judge of the proper amount of water to be added to the clay and of the time that it is to be ground in the pan. This form of preparation is too expensive for common brick, but is practical for wares that sell at a higher tonnage price, such as face brick, drain tile, roofing tile, sewer pipe, fireproofing, etc.

In Europe the wet pan most commonly used is the pan having a perforated bottom and operating continuously, like the dry pan. These perforations are variously arranged and there seems to be a difference of opinion as to which arrangement is best for given conditions, but all agree that though the solid pan, properly operated, gives the best preparation for some products, it is too expensive in labor for general use. A common form of the perforated pan is that having the mullers running upon different sections of the bottom, not in line, the perforated part being under one muller and the solid portion under the others. Sometimes, however, the perforations are not continuous around the bottom, but are alternated with solid parts. These pans have been made a long time in Germany and the manner of constructing them to give the greatest efficiency and durability has been learned. Wet pans are also made in Germany two or three stories high, that is a machine having one perforated pan above another, in one frame and operated by the same belt, each pan having one or two mullers, and discharging automatically into the pan below, and the bottom pan into the brick machine. There is no question but that the perforated pan is a practical machine and would have an extended use in this country were it made here.

The perforated pan gives an action upon the clay—the forcing of the clay through a multitude of small slots, like the dies of a miniature brick machine—that is beneficial in developing plasticity and in mixing. It has been the study of German engineers to get this preparation of the clay with less power than is required with the wet pan and with greater capacity. This has been accomplished by a machine that was designed and patented by Bauer and that has come into use in the past three or four years. This is the

Perforated Rolls.

These rolls have their periphery perforated with small slots so that when the rolls are set close together the clay is forced through these slots to the inside of the rolls where scrapers remove the clay to the chute below. This machine is said to be very satisfactory and its use seems to be extending. In this country, where the wet pan is too expensive in operation, as in the making of brick, the machine almost universally used is the

Pug Mill.

You are all familiar with this machine, so that not much need be said of it. The main thing accomplished by the pug mill is the mixing of water with the clay, and the kneading into a more or less homogeneous mass. It does no grinding and does not to any marked extent develop the plastic qualities of the clay. It is a convenient machine, into which to add the water to the clay and convey it to the brick machine; but generally should be used in connection with other clay-preparing machinery. In recent years the pug mill has been combined with the auger brick machine.

Some clays, especially those of glacial origin, contain more or less pebbles which must either be ground up or removed. The removal of these pebbles from damp clay is not an easy problem. It is indifferently accomplished by the various conical corrugated rolls that are made in this country, though much clay is also carried away adhering to the pebbles and some pebbles pass through the rolls, especially after they have become worn. These pebbles that pass into the brick machine cause trouble at the cutting table when they come in contact with the wires, or later cause cracking of the brick in drying or burning. Moreover, some of these pebbles are fragments of limestone which cause a more serious trouble with which many of you are familiar, that after the pieces of lime burnt from the pebbles have come in contact with moisture they produce "popping," the expansion of the lime breaking out a piece of the brick and exposing the white slacked lime. Hence special consideration must be given in the selection of clay preparing machinery too.

Continued in next issue.

J. William Hart, dean, Department of Agriculture, Rio Piedras, Porto Rico, is in the market for tile making machinery and wants catalogues and estimates.

THE MINNEAPOLIS SEWER PIPE WORKS.

One of the most notable of the new industries which have been established in the Twin Cities district in recent years is the Minneapolis Sewer Pipe Works.

The plant is located at Hopkins, eight miles out of Minneapolis on the Minnetonka Electric car line. The company has its own switching tracks which connect with the Great Northern and the Minneapolis & St. Louis railroads, and over the tracks of the latter road with the Chicago, Milwaukee & St. Paul Ry.

The Plant of the Minneapolis Sewer Pipe Works.

The buildings are so absolutley fireproof that fire insurance is not carried. The machinery is the best that money could buy. Efficiency and economy of operation have been the guiding principles in the general arrangement of the plant. At the right in the large illustration is shown the clay storage building. The drying building of four floors holds the center of the picture, while between these two is the power plant, and the machinery which turns the clay into the green pipe. To the left are sixteen kilns each twenty-eight feet inside diameter, and out beyond these is the st rage yard for the finished pipe.

The cars of clay which are shipped in are run up an incline and into the storage building on a steel trestle from which they are dumped

This building, into which five cars can be run at one time, is 60 by 192 feet in size and 40 feet high, and has a storage capacity of 12,000 tons of clay.

From this storage pile the raw clay is wheeled in barrows and turned into revolving steel pans where it goes through a rolling process under Muller rollers weighing three thousand pounds each From these pans the rolled product is dumped into a hopper and raised by bucket elevators into the two steel storage tanks of 50 tons capacity each. From these tanks the pulverized material is dropped into the wet pan mills. There are four of these wet pans in each of which turn two heavy rollers which oscillate from side to side of the pans, as they roll and thoroughly mix the pulverized clay with water.

From these wet pan mills the mixture is again dumped into hoppers and elevated, this time to the storage feeders of the pipe presses. There are two Turner, Vaughn & Taylor Co. presses, in one of which are made all sizes of tile from three inches to twenty inches, while in the other

The Pipe Presses in Operation.

are made those ranging from twenty-four to thirty-six inches in diameter.

This clay as it comes from the conveyor belts is forced

through the dies of these presses by steam pressure and comes out formed like the finished pipe ready for drying and burning. As the pipe thus formed come from the presses, the smaller sizes are removed by hand and taken to the drying floors where they are trimmed and corrugated. The larger sizes, such as the thirty inch pipe which weighs when green 1,200 pounds and the thirty-six inch size which weigh nearly 1,700 pounds, are lowered from

Second Floor of Drying Building.

the press by means of a power disc rod to a truck on which it is wheeled out, trimmed and corrugated and turned by steam power on to another truck and wheeled to its place on the drying floor.

The largest building at the works is used for the drying process. This structure measures 80 by 300 feet in size and its four floors are made of perforated steel, an innovation in sewer pipe plant construction, for all other plants in this country are usually equipped with floors made of wooden slats. This feature of the Minneapolis Sewer Pipe Works renders the building fireproof, and with the improved system of steam heating as well as a method by which the unused heat from the kilns may be distributed through conduits by means of two large fans to any part of the building to which it is desired, gives ideal drying facilites. This building is equipped with six elevators for distributing the tile to the various floors and to the kilns.

The smaller sizes are taken to the top floor while the other sizes are distributed accordingly with the largest sizes on the ground floor

After a certain period of drying the tile are taken to the kilns, which are built in two rows, eight on each side of a railroad track upon which the supply of coal is brought in. On one side of the track the kiln floor which is made entirely of concrete covers an area of 75 by 380 feet, while on the other side the floor area is 75 by 300 feet All of this space is covered with corrugated steel roofs, which together with the concrete floors are unique in sewer plant construction. Along the track is room for the storage of 2,000 tons of coal.

Power is furnished the plant by a 500 horse power rope drive Twin City Corliss engine and four 125 horse power boilers. The Minneapolis Steel & Machinery Company furnishing the engines and the structural iron work.

Mr. Rich, the general manager, has been connected with the clay business since 1884 and is well acquainted with the trade in all parts of this country.

Practically all the sewer pipe laid in Minneapolis for the last fifteen years has been supplied by the Red Wing Sewer Pipe Company. It has always successfully passed the severe tests subjected to it by the engineering department of the city which is noted throughout the country for the rigidity of its requirements.

The Red Wing Sewer Pipe Company is one of the largest and strongest corporations in the northwest, having an authorized capital of $1,000,000, of which $900,000 is paid in and stock issued. This company now has two large sewer pipe plants at Red Wing and the Minneapolis Sewer Pipe Works really constitutes the third plant of the Red Wing Company.

The first plant of the Red Wing Sewer Pipe Company was built at Red Wing in 1891 and th second plant in 1892. The business of the company kept increasing until it reached a point several years ago where the capacity of the Red Wing Plant was entirely inadequate to supply the demand for the product. When it was finally decided to increase the output of the company to more than double its capacity, Minneapolis was chosen as the proper location for the additional enterprise.

As far, however, as the relations with the trade are concerned, the business of The Minneapolis Sewer Pipe Works is entirely separate and distinct from that of the interests at Red Wing. Horace S. Rich, the general manager of the Minneapolis plant, who has a leading interest

Fourth Floor of Drying Building.

in and is vice-president of the Red Wing Sewer Pipe Company has had sole charge of the construction of the new plant and directs its policy as an independent concern.

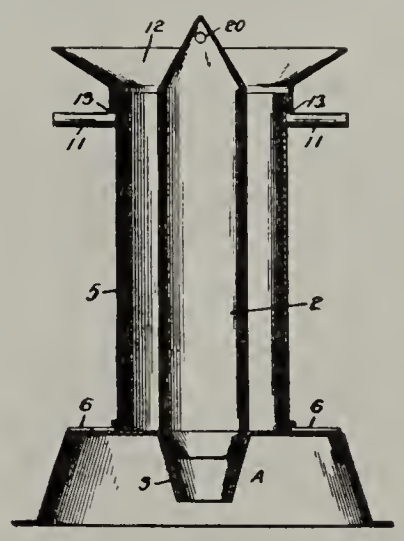
The main offices of the works from which Mr. Rich and his assistants handle the executive and sales end of the business are located in the new Palace building, Minneapolis.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

924,553. Mold. Lorenzo D. Irish, Mason, Mich. Filed June 8, 1908. Serial No. 437,434.

A mold for the manufacture of cement tiles, comprising a base having a conical orifice in its center, a hollow core having a conical end, which fits and is removably held frictionally within said orifice, an outer jacket made in sections hinged together and having outwardly projecting arms adapted to rest upon the base whereby to afford lateral support to the jacket, lugs upstanding from the base in position to embrace the lower end of the sectional jacket to center and retain it in place, and a top plate having depending clips thereon and knobs projecting laterally from the jacket in position to be engaged by the clips by giving the top plate a

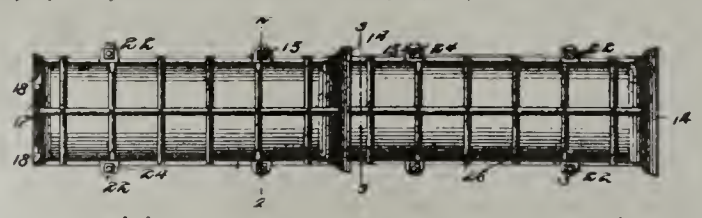


partial rotation, said top plate forming a closure at the upper end of the mold between the cone and the top of the sectional jacket, whereby to mold the upper end of the tile.

924,745. Process of Making Brick. Oreon S. Davis, Anaheim, Cal., assignor of two-thirds to William H. Spake and Octave A. Lagman, Anaheim, Cal. Filed February 23, 1907. Serial No. 358,893.

The herein described method of manufacturing bricks, blocks, and the like, which consists in first forming and pressing the article from clay or earth, drying it to expel moisture, but without baking, immersing it in a bath of asphaltum having a temperature of from 212° to 700° F. to permit penetration of the article by the asphaltum to a depth of about one-half an inch, then removing it from the bath and subjecting it to a gradually decreasing dry temperature having an initial degree approximating that of the melted asphaltum to cause the latter further to strike into the article, and finally removing the article.

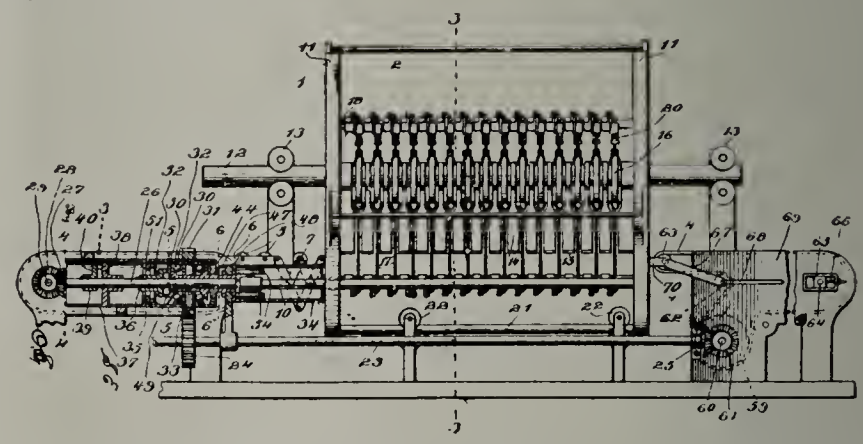
925,316. Tile. Frank R. Elbert, Crestline, Ohio. Filed February 7, 1908. Serial No. 414,846.



A tile comprising an upper and a lower member, each approximately semi-cylindrical in cross section, and having their longitudinal edges overlapping, one of the sections being provided with threaded offset members, the opposite section having extending ears adapted to engage the threaded offsets, securing members for the ears and offsets, one of the ends of the tile being provided with a flared mouth having inturned beveled projections, the opposite end of the tile being provided with a beveled enlargement having inclined slots or cut away portions, substantially as and for the purpose set forth.

924,972. Brick-Machine. Sheridan E. Drummond, Parkersburg, W. Va. Filed July 10, 1907. Serial No. 383,046.

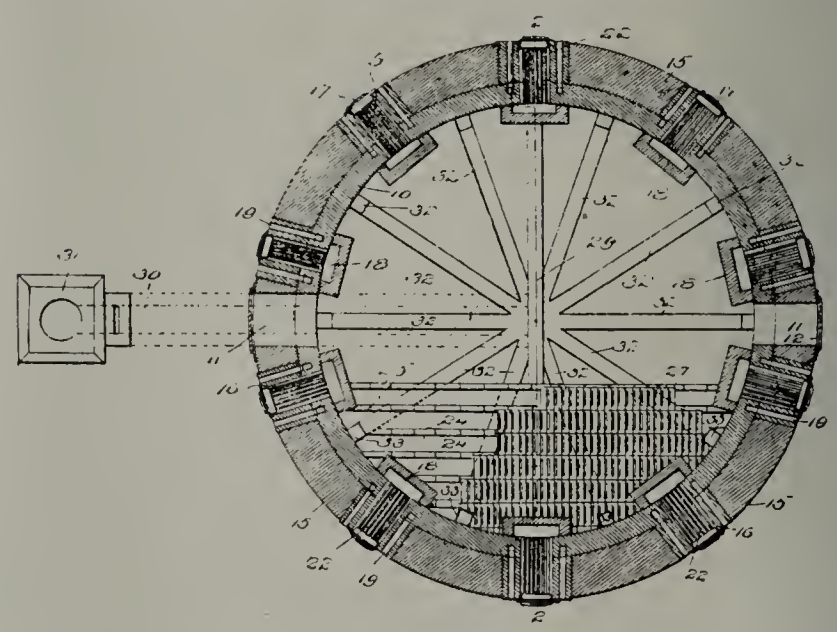
In a brick machine, the combination of a traveling carriage, a series of cutters thereon, an apron for carrying a column to be cut to said cutters, and an off-bearing belt for receiving the cut brick from said carriage, a series of rollers over which said off-bearing belt passes, one of said rollers being connected to said carriage, a link connecting said roller to a similar roller in such manner that two rollers follow the movement of said carriage, thereby lengthening and shortening the receiving surface of said off-bearing belt, substantially as described.



In a brick machine, the combination of a traveling carriage, cutters carried thereon, an apron for receiving a column to be cut, said apron being arranged to be moved by said column, a shaft rotated by said apron and column, a spiral section drum on said shaft for reciprocating said carriage, a power shaft, a clutch operated by the movement of said apron for transferring the power for reciprocating said carriage from said apron to said power shaft, a shaft for rotating said cutters, a clutch operated by said first mentioned shaft for communicating the power from said power shaft to said shaft for rotating the cutters, substantially as described.

925,432. Brick-Kiln. William Gibford, Golden, Colo., assignor of one-half to Laurence Ottens, Golden, Colo. Filed August 13, 1908. Serial No. 448,420.

In a brick kiln, a stack, a trunk flue extending to and terminating at the center of the kiln, a diametrical flue in the



same plane with and communicating at its center with the terminus of the trunk flue, a plurality of radial flues disposed on the plane above and communicating at their central ends only with the trunk and diametrical flues and at their peripheral extremities with the interior of the kiln, a plurality of parallel flues disposed in a plane above and out of communication with the radial flues and communicating at their middles with the diametrical flue, and flooring disposed on the plane and having openings therethrough communicating only with the parallel flues.

PACIFIC COAST NEWS ITEMS.

During the past two weeks several of the large brick plants in the vicinity of San Francisco have closed down for the season and others will follow soon as most of them have made large runs during the spring and summer and now have fairly large stocks on hand. The market for common brick has been in a fair shape for the past six months with but one break in price and this lasted but a short time. However, there is a disposition on the part of manufacturers to carry but light stocks during the winter season and to curtail the output of their plants in order to make sure that there is no overproduction with the disastrous results of a year ago. Many plants which were operated immediately after the fire are now closed and cannot be worked to advantage at the present prices of common brick. Some of these plants are being dismantled and moved to locations where transportation facilities are better and where manufacturing can be carried on more cheaply. It has been pointed out that at the present time there are enough brick plants within a radius of sixty miles of San Francisco to furnish all the common brick that can be used in this territory and that to do this the plants would have to operate only about one third of the time. While this may be true it might also be observed that many of these plants are poorly located and are not in a position to compete in the open market at the prevailing rates asked for brick and can only be operated when brick reaches a decidedly higher figure. Thus the situation is not in as bad a shape as some in the trade would make believe. Prices at the present time are being maintained steadily and the indications are for a much better demand during the coming winter than was experienced last year. While the downtown district of San Francisco is now well built up there appears to be about as much of a call for brick as ever due to the fact that there are now some immense warehouse structures going up and also that many flats and apartment houses are now being built of brick instead of wood as before the fire.

Vitrified brick for paving purposes has not found much favor in San Francisco notwithstanding the fact that other cities of the Coast have found its use very economical and satisfactory. Basalt blocks are still largely used in the downtown districts, but a movement has been started to make a trial of vitrified brick again. Trials of this material were made several years ago but proved unsuccessful. However, it is asserted by manufacturers that there have been great improvements made in these brick since then and several firms stand willing to put down a test stretch of paving if the authorities will accept their product in case it proves entirely successful. At the present time there are several large plants in the vicinity of San Francisco preparing to turn out vitrified brick in large quantities and it will soon be necessary to expand the market for this article. At the present time about the only use for the article locally is in the new sewers which are being lined with these brick. The balance of the local product is being sent to other cities along the coast, but this market is not to be regarded as a steady one.

Up to a very short time ago the market for fire brick was in a very satisfactory condition but a great slump in price has taken place within the past two weeks and as a result the market is temporarily demoralized and several of the large plants have closed down. Two or three San Francisco firms manufacturing firebrick have found themselves in financial straits and have thrown large quantities of firebrick on the market at greatly reduced rates. The Ione Fire Brick Works of Ione, Cal., has decided not to meet the cut in price and that firm has closed its immense plant until the market is in a better shape.

One of the most important changes that have been made in brick circles for some time has just taken place and the Stockton Fire and Enamel Brick Co., and the Golden Gate Brick Co. have combined and will now be managed from one office. C. F. Pratt, who has been manager of the Golden Gate Brick Co. since the fire will continue to act in the capacity of manager and the office will remain at 660 Market St., as formerly. The Stockton Fire and Enamel Brick Co. manufactures pressed clay brick, enamel and fire brick and has filled some very large contracts in this city. The Golden Gate Brick Co. turns out a sand lime brick that has been very popular for facing purposes, fire place construction, etc. The two concerns will now be operated under the name of the Golden Gate Brick Company.

The Monterey Pressed Brick Company, which has been investigating the possibilities of Sacramento as a manufacturing site has decided to establish a plant there and will use sand from the American river as material for fancy pressed brick. A site on the waterfront is being negotiated for and with this transportation to San Francisco and bay points will be an easy matter and very economical.

The Bank of Mountain View, Cal., recently brought an action against the Wheeland Brick Company on a note of $9,000, which was secured by a mortgage on all the property of the Company, which includes about ten acres of land near Mountain View and all the machinery necessary for the manufacture of brick. It is now asserted by the bank officials that the management of the brick company has been making a disposition of a large portion of the property, among the items being 900,000 brick. This action, they claim, has reduced the security to such an extent that a loss is feared and a receiver has been placed in charge of the property.

Under the title of "Men of Affairs of San Francisco" a series of illustrated articles has been appearing in one of the leading daily papers and the many friends of L. A. Steigers, manager of Steigers Terra Cotta and Pottery Works were gratified to see his picture appearing recently surrounded with drawings of building material which have made the Steigers works famous.

The Washington Brick, Lime & Manufacturing Co. has consolidated with the Spokane Sewer Pipe Factory and the new concern will be known as the Washington Brick, Lime and Sewer Pipe Co. J. H. Spear is the president and manager and headquarters will be maintained at Spokane, Wash. The new company is capitalized at $2,000,000 and work will be commenced at once on a sewer pipe factory at Spokane to cost $300,000.

The Los Angeles Art Potteries Corporation has been formed at Los Angeles, Cal., with a capital stock of $100,000. The men interested are C. H. Elrod, L. D. Brode, C. M. Jay, J. Kirkham and J. H. McKnight.

CONTRACT FOR $1,000,000 FURNACE.

The Youngstown (Ohio) Sheet and Tube Company has let a contract for a blast furnace to cost $1,000,000.

The Niles Firebrick Company, of Niles, will line the furnace, the Westmoreland Brick Company will line the stoves, the William Tod Company will build blowing engines to cost $75,000, the Huber Mason Company of Chicago will build ore, coke and limestone bins; the Otis Elevator Company will construct hoisting machines and electrical apparatus and the Babcock-Wilcox Company will supply six 500-horsepower boilers.

CLAY RECORD.

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"I like to read American advertisements. They are to themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

The man who is satisfied to make a good living is the happiest man in the world.

We are all inclined to give the man who agrees with us more credit for wisdom than he deserves.

Did you subscribe for the Clay Record? If not it is still appreciated—better late than never. Only one dollar per year.

The moment you give a bribe you are under obligations, and some day the fact will be brought out and you will suffer the consequences of your own weakness.

Legal struggles seldom pay. Law suits take up time and money, and the result, even if in your favor, seldom offsets the time, money and worry you have expended.

Commerce can never be at a standstill while one man wants what another can supply. You can find the man to supply your wants by inserting an advertisement in the Clay Record.

When you have a friend who has proven himself such, never let up so long as you live in your evidences of gratitude for the kindness he has shown you. Repay him with interest and let your actions towards him ever be a source of happiness and pleasure to him.

In these days of keen competition and wonderful activity it is necessary for the business man to have enthusiasm. If he lacks in this, his business will be at a standstill, while his enthusiastic competitor goes ahead.

BRICK TO SUCCEED MACADAM ROADS.

While macadamized roads in the country districts are a great improvement over the mud roads and have done much to increase prices of rural realty, the Allegheny county officials have learned by personal inspection and inquiry that some counties in Ohio are far ahead of this county in the matter of good roads. It has been shown that brick roads surpass macadam in desirability and durability, hence the commissioners have decided on brick roads for Allegheny county. It seems that such roads have been giving satisfaction in Ohio for a decade or more.

The advantages of the brick-paved country highway are amply demonstrated in Cuyahoga county, in the vicinity of Cleveland. In that section the county pays 65 to 85 per cent of the cost of these highways, and the burden of first cost, therefore, falls very lightly upon the farmers along the improved roadway, the cost falling mainly on city taxpayers. Property along such brick highways after construction promptly jumps in value from 50 to 200 per cent.

In considering the advantages of vitrified brick and block for paving purposes the fact must not be lost sight of that such superiority depends largely upon the construction of the roadway itself and compliance with methods which have been proven to be best by actual experience and the test of time. It is decidedly unfair to paving brick to offer, as an example of its value, a street that has been improperly constructed. Such construction is of more injury to the paving-brick interests than any other one thing, and it is greatly to be regretted that paving-brick manufacturers have not been more united and more determined on this point in past years. Bad construction is almost as bad as bad paving-brick and that there are bad paving-brick on the market is not to be denied. With the growing wisdom of municipal engineers, however, and the rigid tests to which material is now subjected, the manufacture of inferior paving-brick is bound to be discouraged.

BRICK DEMAND BELOW NORMAL IN NEW YORK CITY.

The Real Estate Record and Builders' Guide says: "While the supply and demand for Hudson River common brick are about even, the situation is not normal. The prices ruling on the docks were $5.50 to $6.00, the same figures being paid for No. 1 Raritan Rivers. Hudsons averaged $5.75. The local dealers are disposing of fair quantities of Hudson River commons, but most of the contracts are small rather than conspicuously large ones. This is the rule throughout all the building material markets. There were some instances where delayed steel deliveries on jobs interfered with local brick consumption. Beginning last week there were 15 holdovers; 83 arrivals; and 79 sales, leaving 19 cargoes on the wharf Monday.

"The published formation of battleships in the North River has given the brick manufacturers and agents some concern, inasmuch as it is entirely possible that no brick will be received here for a week or ten days during the fete. If such a contingency should arise, building operations will suffer severely."

OBITUARY

Christian Holt, a pioneer farmer and brick and tile manufacturer, died at his home in Perkins Township, near Sandusky, Ohio, of stomach trouble. He was 86 years of age and is survived by five children.

Mrs. Winifred Patterson, whose sons own and operate the Pioneer Pottery Co., at Millsville, Ohio, is dead. She was 73 years of age and is survived by nine children. Mrs. Patterson established the pottery her sons operate and operated it until the sons became old enough to manage the business for themselves.

FIRE! FIRE!! FIRE!!!

Fire in the brick plant at Freeman, Wash., destroyed the kiln sheds and burned up a lot of cordwood. The loss is $1,000.

The brick plant of John B. Prullage, north of Vincennes, Ind., was visited by a small fire causing damage to one building.

Incendiaries are blamed for starting the $20,000 fire at the Stulton & Harrisburg Brick Co's. plant at 9th and Reily Sts., Harrisburg, Pa.

The S. Barnes & Co., Brick Works at Bolesville near Rochester, Pa., was damaged to the extent of $20,000 by fire. Insurance carried was $15,000.

A gas explosion destroyed a double decorating kiln filled with ware at the Cartwright Pottery at East Liverpool, Ohio, and injured two laborers.

The brick plant of Charles Barricks' Sons, 1445 Clinton Street, Buffalo, N. Y., was visited by a fire which started in an unused drying kiln from sparks from a locomotive.

Fire started in the basement of the Denver Fire Clay Co's. stock room at 1744 Champa St., Denver, Col., and did damage to the extent of $30,000. Fully covered by insurance.

The New York & Philadelphia Brick Co's. plant at Whippany, N. J., has been destroyed by fire. The loss is $20,000 and is covered by insurance. Everything was destroyed but the kilns.

The brick plant of J. B. Kendall, at Byron, Minn., was visited by a $7,500 fire which started in the engine room and destroyed the complete plant. Unfortunately there was no insurance, so the loss to him is total.

BRANCH MANAGER ARRESTED AS EMBEZZLER.

New Orleans, La., Sept. 18.—Miles R. Duffy, resident manager of the Ludowici-Celadon Co., a roofing and tile concern, of Cleveland, was arrested today and charged with the embezzlement of $5,026 of the funds of the company. Duffy had previously made a confession to Chandler C. Luzenberg, the legal adviser of the concern, and this confession he reiterated to Acting District Attorney David Henriques.

Though officers of the company when seen refused to give any definite details, it is said that Duffy operated by means of checks which he drew for his own use on the company's funds in the Peoples Bank & Trust Co.

A. W. Brown, treasurer and vice president of the concern, came here from Cleveland several days ago and Duffy's arrest followed. He admitted that discovery came about through a letter sent from New Orleans about a week ago.

ACCIDENTS, DAMAGES AND LOSSES

C. J. Scott, trustee, has sued the Sargent Brick Co., Painesville, Ohio, to foreclose mortgage and order for sale of premises.

John Nightingale, an employe of the Waterloo (Ia.) Granite Brick Co., had his hand crushed to a pulp by being caught in the toggle of a press.

An Italian employed by the Empire Brick & Supply Co., at Newton Hook, N. Y., met death by being ground to pieces at the brick yard. He fell into the clay grinder.

The Scott Brick Co's. office at Knoxville, Tenn., was visited by someone while those in charge were out and took the payroll, $600, from a drawer and forgot to return it.

Oscar Hunter, aged 16 years, employed by the Copen Brick Works at Parkersburg, W. Va., fell off from a loaded clay truck and was run over, dying a few minutes later.

At a meeting of the creditors of the York Vitrified Brick Co., at Coffeyville, Kansas, which was recently declared bankrupt, the liabilities was given at $128,935, and the assets $53,237.

A receiver has been asked for the Buxton-Beatty Pottery Co., near Worthington, Ohio. Harry J. Buxton, the manager, has left the company without reason is charged. The plant is just outside of Columbus.

Bankruptcy proceedings have been filed by bondholders against the Chanute (Kansas) Cement & Clay Products Co. The petition places the assets at $250,000 and liabilities at $2,000,000. A receiver has been appointed.

At Mason City, Iowa, damages is wanted from two clay concerns. Of the North Iowa Brick & Tile Co., H. A. Bruns wants $10,588.50 for personal injuries received while in the employ of the company, and L. S. Hunter wants $10,450 25 from the same concern for the same reason, and George Danley has filed suit against the Farmers' Co-operative Brick & Tile Co., asking $1,000 for injuries received in the collapse of a scaffold.

THE RAYMOND CO. PURCHASES THE HORTON MFG. CO. PLANT.

The C. W. Raymond Company of Dayton, Ohio, with their usual energy and foresight, have acquired the interests of the Horton Manufacturing Company, Painesville, Ohio. It is known that the Horton Company have been manufacturing the largest line of Soft Mud Machinery ever placed before the clay crafters.

This consolidation completes the Soft Mud line of the C. W. Raymond Company and places it in the enviable position of being the strongest power in the world of clay working machinery.

The C. W. Raymond Company have demonstrated that they are alive to the best interests of the clay worker, as this is the fourth competitor they have acquired by purchase during recent years of their existence. The first one being the Wooley Foundry & Machine Company, of Anderson, Indiana, followed by the Youngren Kiln Patents, the United States Roofing Tile Press and now the Horton Company of Painesville. In each case every article purchased was far beyond the experimental stage, and the experience and thought of the C. W. Raymond Company has brought each one to the highest pinnacle of perfection.

The C. W. Raymond Company are now ready to entertain inquiries for Soft Mud Equipment and all repairs, new parts etc., of the Horton machines will be supplied by them.

VEDERSBURG CO. GETS CONTRACT FOR INDIANAPOLIS SPEEDWAY.

With the announcement by Superintendent Bert Harper of the Wabash Clay Works of Vedersburg, Ind., that the company had secured the contract to furnish the brick for the big speedway at Indianapolis, prospects are very bright for a resumption of work at the plant. The news that the contract had been clinched was telephoned to the officials by R. D. Culver, president of the company, who has been at the capital city for several days endeavoring to land the contract. Owing to the fact that the competition for paving the speedway was unusually stiff there was some doubt as to whether or not the local plant would land the contract. Besides the bids and bickerings of the other brick men, asphalt and many new kinds of paving were considered.

The contract which calls for more than 3,000,000 brick will completely exhaust the supply which the Wabash Clay Factory has on hand. Thirty men went to work loading the brick which will be shipped at the rate of 20 cars per day in order that the shipment may be completed by Sept. 30. This will give the speedway officials sufficient time to have the track in shape for the races and aeroplane flights which will take place there next month.

Besides this contract the Vedersburg plant has contracts for large shipments of brick to Wisconsin, Illinois and Indiana and it now seems imperative that the plant begin work in full force. This means that about 200 men will be in demand at once.

BIG COMPANY GOES INTO BANKRUPTCY.

The Chanute Cement & Clay Products Company, a corporation having plants at Chanute, Kansas, Bronson, thrown into involuntary bankruptcy on petition of seven of the creditors of the firm. On petition of the same creditors, C. B. White was appointed receiver. He immediately gave bond in the sum of $20,000 and left for Chanute to ascertain the condition of the property there.

The case is one that is of especial interest as it involves large sums, the petition setting forth that the liabilities of the company are $2,215,000 while the assets will approximate a quarter of a million dollars. The petitioners, Erick Anderson, W. R. Anderson, Joseph Erickson, A. W. Hedeen, William Erickson, Otto J. Briley and Ben Hoss, all of Chanute, allege that the firm owes them $4,750 and that members of the firm have tried to get them to accept 20 year six per cent bonds at par for their claims. The petitioners maintain that the bonds are not worth par, stating that $2,000,000 worth of the 20 year bonds have been issued as well as $1,250,000 worth of interim bonds, while the visible property of the company amounted to only about $250,000.

The petition recites that the plant at Bronson, Michigan, is valued at $150,000 and that at Chanute at $100,000 while there are debts at the Chanute plant aggregating $115,000 at one place and $100,000 at the other. It alleges further that some of the property is concealed and intimates that the real assets are much larger than appears. It is also alleged that the issue of 20 year bonds, while dated June 1, 1905, were not filed for record in Neosho county until May, 1909.

An interesting feature of the case is that the case is already in the hands of a receiver appointed by the district court and it is not known whether or not the receiver appointed by the federal court will be given possession without due process. Mr. White has gone to investigate the situation and take possession for the creditors.

FIRE DID GREAT DAMAGE TO DENVER PLANT.

The office of the Denver Fire Clay Co., dealers in assay material, located at 1744 Champa street, Denver, Col., was visited by a disastrous fire, which, owing to the large amount of acid and chemicals stored in the building, gave the firemen a dangerous fight. Time and time again the fire was brought under control, when explosions would occur from the chemicals, throwing the entire basement into a mass of flames.

The damage is very heavy. The acid fumes hit the firemen with deadly effect, many of them being overcome. They were rushed to the hospital for treatment.

In order to fight the flames, cream was given the firemen to counteract the effects of the fumes. A quantity of guncotton stored in the basement under the sidewalk, used for chemical purposes, caused much concern, as it was thought the flames would fire it.

On the second floor of the building was stored a large quantity of highly explosive chemicals, and the firemen made desperate efforts to confine the blaze to the basement, and lower floor. If the chemicals on the second floor in the store rooms had become ignited a terrific explosion could not have been averted, and it would have wrecked a score of the buildings in the neighborhood.

ATTEMPT (?) TO KILL WITH THE AID OF DYNAMITE.

Tipton, Ind., Sept. 24.—The residence of Lewis Van Briggle, a wealthy farmer and tile manufacturer of Prairie township, was partly demolished by dynamite near midnight, and Van Briggle and his wife narrowly escaped death.

Though the walls of the room in which they were sleeping were blown out and the furniture reduced to splinters, Mr. and Mrs. Van Briggle were not injured. A peach tree ten feet away was stripped of fruit and leaves and the force of the shock broke glass in neighboring houses half a mile away.

An investigation showed that the dynamite, which had been placed under the bedroom in which Van Briggle slept, had been connected with a fuse twenty-five feet long, which gave the persons who fired it ample time to get away.

The local authorities were notified of the attempt to blow up the home and bloodhounds were brought from Noblesville in an automobile. They took the trail, followed it half a mile to a gravel road, where a buggy had been hitched, and lost it.

Van Briggle says he has no enemies that he is aware of. He was defendant in a damage suit at the last term of court for the alienation of the affections of the wife of Charles Bringle and was acquitted. An effort is being made to learn where the dynamite was purchased.

THE COFFEYVILLE PLANTS ALL BUSY.

The Coffeyville Journal announces that the Coffeyville Vitrified Brick Company with plants at Coffeyville, Independence and Cherryvale, have contracted to deliver 800,000 brick, standard No. 1, from the three yards in the next sixty days. All three plants are working full time in order to fill the order, as well as the many smaller orders for Kansas towns. No better brick made than from the Montgomery county shales and burned natural gas, and Independence is fortunate in having one of the best plants.

MUCH AKRON CASH IN KANSAS CEMENT AND CLAY FAILURE

Akron, Ohio, Sept. 25.—The bankruptcy proceedings of the Chanute Cement & Clay Product Co., of Ft. Scott, Kan., involves many Akron people. It was planned to have the bankruptcy action started in Cleveland, but that is now found impossible.

The company was organized here, and the company has offices in this city, with Joy T. Hutton, the secretary, in charge. John F. Townsend, an Akron capitalist who owned much of the property that was taken over when the combine was formed, received $750,000 worth of the original $2,000,000 bond issue in exchange for certain property, including land in Chanute, Kan., a cement plant already in operation at Bronson, Mich., and property in Wood County, Ohio.

The remainder of the bonds were deposited with the Cleveland Trust Co., with the understanding that they were to remain there until a plant with a capacity of 3,000 barrels a day at Chanute should be completed. In lieu of the bonds on deposit another issue of "interim" bonds amounting to $1,250,000 was issued and turned over to a new organization, the Summit Construction Co., largely composed of the same people as the other. It is thought $1,000,000 was raised by the sale of these interim bonds, but it was not sufficient to complete the plant, and work was suspended not long ago for lack of funds. This was the beginning of the bankruptcy proceedings.

A movement has been started here to raise sufficient money to reorganize the Chanute Cement & Clay Product Co. The failure may cause an investigation as to what has become of all the money raised for the new plant. Mr. Townsend, the president, is living in England, and little has been heard from him since he relinquished active control. He has been one of Akron's wealthiest capitalists. The petition filed in bankruptcy court alleges irregularity in the execution and filing of the mortgage bonds.

Between $75,000 and $100,000 worth of the bonds are held here, and the holders fear they will lose considerable. Attorney Orlando Wilcox, representing the creditors, says it will require $200,000 more to finish the plant.

OHIO POTTERS PLAN A COMBINE.

It is possible that before the year ends certain financial interests of Pittsburg will become identified with the pottery industry of East Liverpool, O., and vicinity, and that a number of potteries now operated independently will be under one head.

A plan has been outlined, but it does not contemplate a merger of all potteries, but just sufficient to give the new interests an entrance into the business while they plan to build a large and modern property and prepare for extensive operations.

While it is not a possibility to announce names at this moment, the plan is said to be backed by ample capital, and that besides many Pittsburg capitalists being interested in the deal, New York will also have representation

Before the passage of the tariff bill, that should the pottery schedule be passed over favorably, a corporation would be formed for the purpose of buying control of the majority of American general ware potteries. This plan, however, has been thrice tried and thrice failure has been written over the months of effort.

Every time an effort has been made to form a consolidation of the pottery interests, it has been flooded with so much water that the accomplishment of the purpose was impossible.

MORE CITIES COULD PATTERN AFTER SEDALIA.

After years of effort Sedalia, Mo., has secured a much-needed industry, a modern brick plant. This plant has recently been installed at a cost of many thousand dollars. Its owners came here on the assurance of leading men and property owners that the plant was wanted and would be supported. In a word, Sedalia stands practically pledged to buy brick from the Sedalia Clay Mfg. Co., provided they make good brick and sell at prices no higher than outside concerns.

We are told by Mr. Mecusker that the plant is now making common brick. That it will make facing brick for finishing purposes and as soon as all the kilns are completed will make paving (vitrified) brick just as good as can be purchased elsewhere.

The Sedalia plant has available an abundance of shale, and sample brick burned prove that for paving purposes this is as good as any material heretofore used in the streets of this city.

The paving of the streets of Sedalia with brick will go on steadily until all streets are paved. Contracts are now outstanding and petitions are now pending in the city council for more paving. Property owners on many streets are considering the question of early paving, and it is to these citizens The Capital would appeal in behalf of our newest home industry, the brick plant.

If it is true as Mr. Mecusker says, that the home plant will be burning a million paving brick a month before the first of the new year, and that by the beginning of spring enough brick can be accumulated to meet all requirements —if it is true that these brick are as good as any made, and can be sold for less money, then the people of Sedalia should see that in the contracts for street paving it is plainly specified that only Sedalia-made brick be used.

This city has always encouraged the coming of factories and industries of every kind employing labor or using up home material, but we have been prone to forget, after the factories were established, that they were home institutions and have given too liberally to outsiders orders which might just as well have been placed and filled at home.

Let us make an exception of this brick plant. It is an industry we have long needed, it will give employment to men and teams and very little of the money spent by purchasers of its product will leave the county. It is strictly a home industry and should be encouraged in every way.

McLANE BRICK CO. MAKING GREAT SUCCESS

The McLane Fire Brick Company, with three plants located in Irondale, Vanport and one in Wellsville, is in a most flourishing condition at present. The plant located in Wellsville is very busy filling orders and are putting on more men every day. They have increased their capacity from 20,000 to 25,000 a day within the past few weeks.

The plant in Irondale is also doing an unusually good business considering the present conditions and it has been necessary to handle the business at that plant for the company to erect three new kilns. The kilns are of the usual size. Work on the kilns will be started within a few days, but it will be several weeks before they are completed.

The manner in which the plant in Wellsville has been working has certainly been a great blessing to Wellsville. The plant employs about fifty men and every man on the plant is drawing more than the regular time. The fires have been burning almost incessantly during the past two years.

JERSEY CITY BUILDING CREATES BRICK FAMINE.

That the brick market along the Hudson River is feeling the unusual demand by reason of the extraordinary building activity in Jersey City, N. J., is a fact that is not only true but likewise indicative of the fact that Jersey City is experiencing an unusual and remarkable era of real estate prosperity; yet such is the case, and so great is the demand that the journals are speaking of it as a condition worthy of comment. At the present time there are more than 25,000,000 brick being used in but a few of the large Jersey City building operations, and there is an indication that the demand will continue for some time to come.

It is interesting to know just how so many brick can be used at once, but it is only necessary to mention a few specific cases. The new tobacco plant of P. Lorillard & Co., in the West End section, which will be much larger than the average person has any idea of, will require 8,000,000 brick; the new public school No. 3, on Bright street, will take 2,000,000; public school No. 32, at Eighth and Coles streets, is taking 7,000,000; public school No. 17, on Duncan avenue, which is now just nearing completion, took 4,000,000 brick; public school No. 33, on Clendenny avenue, took 3,000,000, and public school No. 15, on Dwight street, 3,000,000; the Adams Express Company's new stables, at York and Montgomery streets, near Henderson street, will take 900,000, and there are a number of smaller jobs that will take a large number of brick.

To show that the situation there is not merely one of the moment the futures that will require large quantities of brick are the new skyscraper office building of the Union Trust Company, on the site of the old Davidson building at Washington and Montgomery streets, and the new postoffice building directly opposite, upon both of which sites large brick and stone structures are about to be built, and the new office building of the Colgate Soap and Perfume Company, at York and Hudson streets, for which R. Waddington & Sons, of Hoboken, have excavated and Sanford & Ross are now driving the piles.

BRICK MANUFACTURE IN MEXICO

Every city of importance in Mexico has its brick factory, which supplies it with the necessary material for construction. However, there are but one or two brick plants that are equipped with modern machinery, and that sell their product at any distance from their factory.

The largest brick factory in the republic is the Teoloyucan, situated in the Federal district, and the only concern to turn out pressed brick in considerable quantities.

Marble, paving brick and tiles are imported into the republic to the extent of an annual valuation of approximately 300,000 pesos, the majority of these products coming from the United States and Germany.

Perhaps half of the brick yards in the republic are at the present moment idle or working at less than a quarter of their capacity, and there is a tremendous stock of manufactured brick on the market that cannot find purchasers.

The average price of pressed brick in Mexico City is 24 pesos a thousand.

R. E. Weaver, of Akron, Ohio, the lessee of the Harris Brick Co.'s plant in Zanesville, Ohio, which burned to the ground last week, announce that the plant would be rebuilt as soon as possible. This means that the plant will be running full time within the next six months.

Mr. Weaver has orders already received that will require almost one year to fill. The plant will be rebuilt on more modern lines.

TRANSMISSION COMPANY HAS LARGEST PLANT IN WORLD.

Laying claim to the largest plant in the world for the manufacture of machinery for the mechanical transmission of power, is no idle boast with the Dodge Manufacturing Company, Mishawaka, Ind., whose buildings cover nearly 40 acres in a 60 acre location on the Lake Shore & Michigan Southern Railway.

The consumption of raw materials, the production of finished goods, and the capacities of the power and mechanical equipment, are evidence of the extensiveness of the factory.

There is annually consumed 20,000 tons of pig iron, 7,000,000 feet of lumber, 900 tons of steel and structural iron, 6,200 tons of steel shafting and 9,000 tons of coal.

There are annually produced 250,000 "Independence" wood split pulleys, 100,000 "Dodge Standard" iron split pulleys, 90,000 solid iron pulleys, 95,000 hangers, 150,000 bearings of all types, 4,000 friction clutches and more than 2.000,000 lbs., of bearing metal.

The steam boilers have a capacity of 1,500 h. p. and the steam engines 1,500 h. p. with electric generators of 250 k. w.

The steel shop in which the Eureka water softener and purifier is made, has a capacity of 52 fully equipped machines per annum.

YORK BRICK MEN HAVE CONSOLIDATED.

The brick manufacturers in York, Pa., have been consolidated and if in the future contractors and dealers want to buy bricks they will have to do so through the York Brick Exchange. However, this form of selling mud products through a direct exchange only applies to sales made from local manufacturers. The consolidation was brought about to establish a uniform price, and was launched at a meeting of York's leading brick manufacturers.

Whether it will affect the prices of the building utensils could not be learned definitely, but according to one of the manufacturers, prices may advance.

The consolidation will affect the following manufacturers: B. Kissinger, C. E. Miller and W. H. Grothe. John F. Kissinger was elected president of the exchange. H. B. Mehring was elected secretary and general sales manager. Mr. Lucas was chosen assistant secretary. The executive committee is composed of all members of the exchange.

The York Brick Exchange has opened an office in the P. A. and S. Small building, Center Square, where it will conduct future business.

CANADIAN CEMENT CO. TO ACQUIRE STOCK.

The prospectus of the Canada Cement Company, which proposes to acquire a majority of the stock of the Western Canada Portland Cement Company, limited, in addition to the ten companies previously announced, has been issued. According to this the corporation will issue $5,000,000 7 per cent cumulative preferred shares at $93.00 a share, which will carry with it a bonus of 25 per cent in ordinary shares. Subscriptions for $3,200,000 of the preferred shares, it is stated, have been received. The estimated net earnings amount to $1,900,000. After paying interest on its $5,000,000 6 per cent bonds, an annual 2 per cent sinking fund on the same, and 7 per cent on the $10,500,000 preferred stock, it is figured that the new company should have left $765,000 available for dividends on the ordinary shares.

POTTERY NEWS ITEMS.

The Imperial Porcelain Co., Trenton, N. J., have let the contracts to rebuild their plant which was recently destroyed by fire. The work will cost $12,00?.

An addition will be made to the Harley Pottery Co.'s plant on Clifton Ave., Nashville, Tenn. A permit has already been made for the work.

The Florentine Pottery, Chillicothe, Ohio, is working at its fullest capacity manufacturing sanitary ware, and soon will be forced to double the capacity of the plant.

The Bradshaw Pottery, Niles, Ohio, which has been in the hands of a receiver, is now advertised for sale for Oct. 2nd. A number of parties have made offers for the plant.

The Gotham Tile Co., New York, has been incorporated with $25,000 capital stock. Incorporators are Charles M. Rosenthal, J. N. Baum and A. A. Bertini.

The Thomas Maddock's Sons Co., Trenton, N. J., held their annual outing to over 1,000 potters. The affair was held at the Inter-State Fair Grounds and was one of the greatest industrial picnics ever held.

The Sebring, O., Art Stone Co. has been incorporated to utilize the waste products of the potteries of the Sebring districts. It is planned to manufacture building blocks from the waste.

W. R. Williams is at the head of a $50,000 company that will build a specialty pottery at Grafton, W. Va. East Liverpool manufacturers will get the machinery order.

Additional clay working machinery has been installed in the plant of the Homer Laughlin China Co., at Newell, W. Va. This firm is working its 64 kilns to a larger capacity than ever.

W. H. Tantum of Broadway, Va. is considering the building of a pottery to make electrical supplies, such as cleats, knobs, tubes, sockets, receptacles, etc., and is considering Baltimore, Md.

Glengary, a small village near Sherman, Wexford Co., Mich., is to have a pottery. The business men have subscribed $30,000. The product to be made from clay taken from the banks of the Manistee River.

It has been circulated that a new Electrical Porcelain factory is to be located at Newell, W. Va., just east of the Homer Laughlin Potteries. John W. Boch, the expert ceramist will be at the head. It is supposed to be a Westinghouse enterprise.

The Globe Pottery Co., East Liverpool, O., at their annual election, elected N. A. Frederick president and Clarence A. Bauman secretary, treasurer and general manager. Mr. Frederick has practically turned over the affairs of the company to Mr. Bauman and other younger heads.

Arrangements have practically been completed for the establishing of a pottery for the manufacture of fine china ware at Big Rapids, Mich. The citizens will raise $60,000 and E. J. Owen of Ohio will build a $150,000 pottery employing 200 people within four months.

L. R. Whitney, general manager of the National Drain Tile Co., headquarters at Terre Haute, Ind., has been selected by the Citizens Independent League of Terra Haute as their candidate for Mayor. He is a model business man and will give them a business administration.

MISCELLANEOUS ITEMS

The Griffin (Ga.) Pressed Brick Co., have enlarged the capacity and improved the quality of their brick.

The Cunningham Brick Co., Greensboro, N. C., are making many improvements and increasing the capacity of their plant.

W. D. Simon & Son, owners of the Churdan (Ia.) Brick & Tile Works, are having a large sale of their goods and cannot supply the demand.

A big brick factory, to cost about $20,000 may be located at Corvallis, Oregon. J. W. Robinson of Elgin, is interested.

The Brownwood, Texas, shale is attracting considerable interest in that section of the country. The Brownwood Commercial Club is interesting itself in the matter.

The Southern Brick Co., Atlanta, Ga., has been incorporated with $15,000 capital stock by W. L. Pethel, T. E. Simmons and William E. Withers.

A brick and tile company are in communication with Guy H. Powell, of Warroad, Minn., in reference to their installing a brick and tile plant there.

The Star Brick Co., of Nowata, Okla., has been incorporated with $25,000 capital stock. The incorporators are E. C. Pollard, J. J. Riner and P. D. Kirk.

The Clark Brick Co., Malvern, Ark., has been awarded the contract to furnish 1,000,000 brick for the State National Bank, at Little Rock.

Dalton, Ga., may have a large brick plant in the future if the plans of Morris & Co., are carried through, to build a large ice and cold storage plant.

Charles A. Tramp has sold his interest in the Creston Brick & Tile Works at Creston, Ia., to his brothers, W. C. and H. L. Tramp, who are now the sole owners.

The Streator (Ill.) Clay Manufacturing Co. are contemplating the building of a brick manufacturing plant with 50,000 daily capacity.

The Seneca (Kan) Shale Brick Co. are doing a slashing business and it is impossible to fill the orders with a full force of men all the time.

The Coleman (Texas) Brick & Tile Co. is preparing to put in a $25,000 plant and has an expert making a thorough examination and test of the clays.

The Western Fire Brick Co., has sold its plant and property at Argo, to the Denver (Col.) Sewer Pipe & Clay Co., and the new owners will convert it into a pressed brick manufactory. The consideration was $50,000.

James W. Lansberry, who for several years has been the superintendent of the Union Mining Co's. fire brick works at Mount Savage, Md., has resigned and Clarence Lansberry, his brother, who has been the assistant superintendent has succeeded him.

There is great excitement among the farmers and property owners at Sackett Lake, not far from New York city, over a discovery of a clay that burns as well as coal and abounds in great quantities. This clay, when dug up and allowed to dry out in the sun, becomes porous and hard as flint. A lighted match will ignite the clay and it burns until consumed. A specimen of the clay has been sent to Cornell University to be analyzed.

Haigh's New System of Continuous Kiln **Arranged to Suit all Locations**

These Kilns can be seen burning Roofing Tile, Drain Tile, Dry Pressed Facing, Fire, Paving and Common Building Brick

Points of Superiority: Cheapness in construction. Easy to understaud and operate. Perfectly free from any nuisance. Will save more than one-half of the fuel used on other Kilns. Specially adapted for Utilizing Waste Heat for Drying Purposes, and which is being done most successfully

Address, H. HAIGH, Catskill, N. Y.

The Giddings (Tex.) Pressed Brick Co. has opened up its second kiln of brick; same are better than the first, which were pronounced first-class.

American purchasers of British clays via the port of Plymouth, in Devonshire, Eng., aggregate $1,547,933 in the year ending June 30.

Employes of the Ridley Park Brick Co., Philadelphia, Pa., were getting $1.80 per day and struck for $2.00, which was granted to them after a delay of part of a day.

The stockholders of the Jonesboro Clay & Mining Co., held their annual meeting in the company office, 1907 Geyer Ave., St. Louis, Mo., the 27th. Ferdinand Ammann is president and M. T. Ammann, secretary.

G. W. Life, Second St., Portsmouth, Ohio, has on exhibition brick made from the clay taken from his father's farm in the Shenandoah valley, and a company is being organized to develop the industry.

The Sapulpa (Okla.) Brick Co. has been incorporated with $100,000 capital stock. Incorporators are O. A. Kentner, C. D. Powell, E. C. Wallace and Joseph Bruner, of Sapulpa; W. H. Powell, of Wichita, Kan., E. N. Gause, of Caney, Kan., and John B. Paul, of Kansas City, Mo.

R. E. Weaver, of Akron, Ohio, has leased the Harris Brick Co's. plant at Zanesville, Ohio, which burned to the ground last week and will rebuilt as soon as possible, so that the plant will be running full force within six months. Mr. Weaver has orders ahead for one year.

M. A. Metzer, formerly connected with the C. Pardee Works and later with the M. A. Metzer Tile Works at Perth Amboy, N. J., has gone to California and taken a position in the management of the Western Art Tile Co. The Metzer plant has been closed down.

Axel Anderson, of the Anderson Brick Co., Minneapolis, Minn., is willing to solve the workhouse brick problem and to take the 2,650,000 brick off their hands at a fair price. He does not feel any union organization trouble by so doing and believes a favor is being done to the city.

The Buckeye Clay Pot Co. has bought land near the Libby Glass Co's. plant at Toledo, Ohio, and will build a plant to make clay pots for glass making. M. J. Owens and the officers of the Libby Glass Co. are interested in the $10,000 company.

The Board of Trade of Wellsboro, Pa., are endeavoring to secure a brick plant for that place.

The brick plant at the Minneapolis, Minn. workhouse has been closed by Superintendent F. R. McDonald.

The Newton, Kansas, Commercial Club have tested clays and claim to have most excellent ones that will be used within the next six months, making brick of high grade.

The Lehigh (Ia.) Sewer Pipe & Tile Co., recently held their annual meeting in the company office at Ft. Dodge. They have added two new kilns and are now putting in new boilers.

The Wyoming Brick Co., under the new management of G. A. N. Thorn, has completed two new kilns and are now putting in new machinery. The brick are delivered by a great Auto truck, its capacity being 4,000 brick.

The Y. O. C. Brick Co., Pine Bluff, Ark., have the contract for the brick for the seven story bank building for the Citizens' Bank. The Southern Building Co., of Louisville, Ky., having the general contract.

The Barboursville (W. Va.) Clay Mfg. Co. has been organized with $25,000 capital stock. Incorporators are S. B. Deering, and P. W. Yost, of Amos; E. E. Adkin, G. E. Thornburg, M. O. Johnson and F. W. Payton, of Barboursville.

The Black Diamond Brick Works, Portsmouth, Ohio, has undergone a number of improvements and will resume operations soon. Quite a number of new kilns have been built and the capacity of the plant has been greatly increased.

NOTICE

The Trade Mark

TAPESTRY

is registered in the U. S. Patent Office and is our exclusive property It brands our best burned clay products All manufacturers and dealers, except those selling our goods, are warned against infringement.

Boston **FISKE & CO., Inc.,** New York

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GLASS SAND
ROCK, CLAY
COAL, ETC.

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue W. C.

American Process Co.,
68 William St. NEW YORK CITY

Mounds (Okla.) citizens are working for a brick making plant for their town.

The Claytonia Brick & Clay Co., Evansville, Ind., recently declared bankrupt has been discharged.

The Akron Vitrified Clay Mfg. Co. have purchased 20 acres of clay land adjoining their clay banks at Akron, Ohio.

Frank Richmond, the Hannibal, Mo., brick manufacturer and contractor is burning his last kiln of brick for the season, it contains 400,000 brick.

Harry Jiencke, Independence, Kansas, has most of the outside capital subscribed for a large vitrified brick works to be built south of Rock Creek.

W. H. Miller, a Mulberry, Kansas banker,, has bought the Arcadia (Kansas) Brick Works, and it is supposed he will reorganize and operate same.

The Columbia Clay Works plant at Columbia, Ill., is offered for sale. The office of the company is at 610 Commonwealth Trust Bldg., St. Louis, Mo.

Leon Keeble Brick Co., Fort Worth, Texas, has been incorporated with $20,000 capital stock. Incorporators are W. H. Rivers, W. C. Rivers and Leon Keeble.

E. C. Baldridge has leased several acres of clay land on Mount Prospect, Manhattan, Kansas, and will construct a brick plant. The machinery is already on the ground.

The brick plant of Brower & Best, of Thompsonville, Conn. has resumed work after a week's shut down. The firm closed a contract to supply 2,000,000 brick for immediate shipment.

The Union Brick Co., Cherryvale, Kansas, has a large force of men laying a pipe line from their Coffeyville Co's. plant to supply water. The plant is now shut down for the want of same.

The Gem City Paving Brick plant, 12th St., below Locust St., Quincy, Ill., has been bought by Hutmacher Bros., ice dealers and they will dismantle the plant and sell the machinery.

The American Clay Products Mfg. Co., St. Paul, Minn. has been incorporated with $100,000 capital stock. Incorporators are L. F. Mettelman, C. R. Parker and F. H. Schriber of St. Paul.

The Windsor Brick Co., Akron, Ohio, has increased the capacity of its plant from 36,000 to 63,000 brick daily, the addition being fireproof. A new power plant is now being added to the equipment.

J. B. Watson, superintendent of the Freeman plant of the Washington Brick, Lime & Mfg. Co., has resigned and J. R. King, of Clayton, succeeds him. The company is making arrangements for a good water supply.

The Oklahoma Brick, Tile & Gas Co., Blackwell, Okla., has been organized with $150,000 capital stock by J. W. Beatty, Z. A. Harris, W. D. Kistler, W. H. Thompson, Wm. Vickery and Willard Toster all of Blackwell.

The Muskogee (Okla.) Pressed Brick Co. will commence operations at Crekola in 60 days. The company is organized for $30,000 with A. B. Bellis, president; J. M. Perkins, vice-president; J. M. Gossom, secretary; and Frank Fee, treasurer. They will use natural gas from the Shoenfelt wells to burn pressed brick.

The Maben (Miss) Brick Works has been started up after being idle for several months.

The Barron (Wis.) Red Pressed Brick Co. has increased its capital stock from $10,000 to $12,000.

The York (Pa.) Clay Co. has been incorporated by W. F. B. Stuart, John McCoy, Robt. L. Motler and Harry C. Motler.

The Alliance (Ohio) Clay Products Co. have the contract to furnish the brick for the new baseball grounds in course of construction at Cleveland, Ohio.

The S. Barnes & Co. Brick Works at Rochester, Pa. will be rebuilt as soon as possible. The plant is at Bolesville.

The Densmore (Lebanon, N. H.) Brick Co., has commenced to ship brick to Barre, Vt. Its first shipment being an order for 350,000 brick.

R. W. Russey, Arkansas City, Kansas, has had samples of shale tested and made into satisfactory brick and is now trying to organize a company to build a plant and make them.

The Buhl (Idaho) Pressed Brick Works is developing the city by transforming it from a shack town to modern brick buildings. They will double the capacity of the plant before next season.

The Peebles Paving Brick Co., Portsmouth, Ohio, has commenced the building of a large and latest-improved kiln which is 10 times as large as the average one. This will greatly increase the capacity of the plant.

The Alton (Ill.) Brick Co. has been shut down for a week so as to electrify all the machinery. The fine power house has been completed, machinery installed and everything ready to operate in the future by electricity.

The New Era Brick Co's. plant, Bay City, Mich. has been closed down on account of an injunction enjoining the company from operating it until the smoke stacks are raised to 60 feet. The company had brick in the kilns for this purpose.

O. F. Leonard, who was the moving spirit in the Carbon (Ind.) Clay Works, known as the Indiana Fire Proofing Co., is making an effort to have the receiver of the plant operate same until the small obligations are paid, then turn it over to the company.

The Mass City Brick Co's. plant has been dismantled and the machinery shipped to St. Ignace, Mich., where the Northern Michigan Brick & Tile Co. are rebuilding it. Thomas Rustin is the assistant superintendent and in charge of the work.

The Alliance (Ohio) Brick Co. has been incorporated with $300,000 capital stock. Incorporators are F. A. Hoiles, W. H. Purcell, George Reeves, A. S. Reeves, F. E. Dussell, Ross Rue, Fred Zurbrugg and Isador Koch. The company will manufacture various kinds of clay products.

Inquiry No. 3924 Bureau of Manufacturers, Washington, D. C. comes from Canada requesting the names of American concerns manufacturing machinery for a portland cement plant. It states that they expect to build one shortly and will place his order in the United States for the machinery.

FOR SALE

One Penfield power Repress in first-class condition, capacity 10,000 per day, used only one month, write for particulars.

American Enameled Brick & Tile Co.
1 Madison Ave., New York City.

WANTED

One good second hand Housing for Stevenson 9 foot dry pan, 2 pieces. Address,

BOX 52.
Hyndman, Pa.

Second-Hand Brick Machinery For Sale

1 two-mold brick press.
1 three-mold brick press.
1 four-mold brick press.
1 Freise stiff-mud auger machine, pug mill and cutter.
1 dry press mixer.
2 small engines.
Let us know your wants.

Scott Manufacturing Company,
1811 Third National Bank Bldg St. Louis, Mo.

Brick Plant for Sale or Lease

A cenveniently located brick plant on the main channel of the James River, 90 miles from Richmond, 18 miles to Newport News, and 40 miles to Norfolk, all having a good steady market for brick. Easy transportation for large boats. Want to see plant in operation. Therefore would make very easy terms. Address MRS. AGNES L. TURNER,
Ferguson's Wharf, James River, Va.

FOR SALE

One No. 9A Brewer Tile Machine with hand Brick and Tile Cutters, Brick Dies and Tile Dies 3½ to 8 in. One 40 horse power Engine.

C. L. FINK,
Bricelyn, Minn.

WANTED

One good copy of the Clay Record, Number 10 Volume 16, to complete files for a ceramic school library. Address ROSS C. PURDY,
Ohio State University,
Columbus, Ohio

FOR SALE

Plans and Rights of Round Down-draft Continuous or Semi-Continuous Kilns. Both types possess new and improved features Address
William Radford,
Phoebus, Va.

POSITION WANTED

As general superintendent or general manager of a large brick works--Or the planning and building of a large plant. Tweuty years experience with all kinds of clays and shales and all processes from mud to dry process yards. All styles of wood, coal and gas kilns. Understands the business thoroughly from clay pit to office work. Also competent in Sewer pipe and architectural Terra Cotta Manufacture. Address Brick Yard Supt.
Office 56, No 84 Washington St.
Chicago, Ill.

DRY PRESS FOR SALE

We have for sale one American four mold dry press, as good as uew. A bargain if sold at once.

Des Moines Clay Mfg. Co.
Des Moines, Ia.

BRICK PLANT FOR SALE

Well known and good market in the city of Minneapolis. Plant is running at present. Will sell equipment and yard including horses. If deal is made quick owner can make brick this fall for spring trade. Address
Minnesota, care Clay Record,
Chicago. Ill.

POSITION WANTED

Sand-lime brick manufacturer, 15 years experience, highest references, wants position as Manager or Superintendent of a sand-lime brick plant. Capable to build a plant, to run it and to make it pay. If you cannot make money now call upon me.
Address "SAND-LIME,"
Care of Clay Record, Chicago Ill.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

CLAY FOR SALE

Tell us what kind of Clay is wanted; we may have it in our line.

Industrial Commission, Soo Ry.,
Minneapolis, Minn.

A BAGAIN

1 E. M. Freese Automatic Cutter, Cost $600; good as new; will sell for $300.
1 American Clay Working Machinery Co. Clay Crusher, good condition, $100.
1 No. 8 Penfield Auger Brick Machine, capacity 25,000 to 30,000 per day.
83 Roller Bearing Iron Dryer Cars, decks 3 ft. by 6 ft 8 in., in good condition, $5.00 each.
This machinery is all in good condition aud I am offering it at little above scrap prices.
If interested write,

Jas. F. Du Bois,
Bellaire, Ohio.

WANTED

A practical brick and tile man to take the management of a brick and tile plant and invest some money. No tile plant within 100 miles Cannot supply the demand. Everything up-to-date in machinery, dryers, kilns, etc. Located in Michigan.
Adddress "MICHIGAN" Care of Clay Record,
Chicago, Ill.

FOR SALE

Two second hand American Clay Machinery Co. No. 2 Automatic Cutters.
One Western Wheel Scraper Co No. 2 Jaw Crusher.

Hydraulic Press Brick Co.,
Brazil Branch,
Brazil, Ind.

DRYER CARS

We have on hand a lot of secoud hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Clevelaud, Ohio

FOR SALE

A brick and tile plant in Green County, Iowa. Cannot supply the demand. All new machinery. Good reason for selling. Write for particulars to GREEN, Care of Clay Record
Chicago, Ill.

WANTED

Superintendent of Combined Dry Press and Stiff Mud Yard. Capacity about 60,000. Best equipped plant in the south. Want high grade experienced man; married man preferred. Right salary to right man.

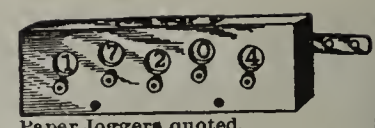
GULF STATE BRICK CO.
Beaumont, Texas.

WANTED

A young or middle aged man, of habits, strictly good, honest and reliable, one who is experienced in the manufacture of clay products and also able to handle correspondence pertaining thereto, and the use of machinery for the manufacture thereof, for position in sales department of reliable machinery manufacturer. In reply to this advertisement state salary that would be expected and give several references as to ability and character. Address.
Sales Dept. Care of Clay Record,
Chicago, Ill.

LOCATION OR PLANT WANTED

I am looking for a location or preferably a plant partially or ready to run for making clay products; such as drain tile builders and pavers, in fact a good shale and fire clay proposition, preferably in Indiana or Illinois, on good road or roads Will buy a managing and sales managing interest or all if conditions are right. Address
"LOCATION" Care of Clay Record,
Chicago, Ill.



No better made, cut from $8 and $10, to
4 Wheel, $3.00
5 Wheel, $3.25
Guaranteed.
Sold by all dealers.

Paper Joggers quoted.
R. A. HART, 41 White St., BATTLE CREEK, MICH.

GOOD OPENING FOR CAPITAL AND EXPERIENCE

For the purpose of making enlargements would like to interest capital in clay plant, have dry press and stiff mud outfits, making fire brick, face brick, hollow building tile, fire proofing and common brick. Located in the west and have a great advantage in freight rates over a good market on fire brick, fancy face brick, tile etc. Have immeuse deposits of high-grade fire clay, several varieties of shale and unlimited quantities of good surface clay. Would prefer to interest parties practical in clay working and will offer good inducements.

A. N. M. Care of Clay Record,
Chicago, Ill.

BRICK YARD FOR SALE

I have a nice little Brick and Tile Plant that supplies a local trade of 500,000 to 800 000 Brick and 100.000 Tile. 7 acres of fine red burning clay. New 6 room dwelling. new 40 H. P. Engine. 65 H. P. Boiler, Frost make. Frost Dry Pan, Brewer Mill, Automatic cutter, Hoisting drum. Steel track, everything in first-class running condition. No debt. Sheds and Buildings newly roofed. 2 good down draft kilns, Stiff mud pallets for 100.000 brick, premises newly fenced with "American Field." Good pasture and fine for truck, right in town. $12,000 would scarcely replace it. Will take $4.900 cash, $2.000 down, time on rest. Would consider au exchange for small well improved property at its low cash value. If this looks right to you come and see it, no time to fool away in correspondence.

C. A. ZANDER,
Rushville, Ill.

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick.
Address,

FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio

Address A. B. care Clay Record.
Chicago, Ill.

FOR SALE

I have a Brick and Tile Plant costing $20.000, Electric Power, Steam Dryer. Make soft mud aud stiff mud brick and drain tile. I want a man with a few thousand dollars to take one-half interest in the business If you are looking for a good chance to get into business by investing at 50 cents on the dollar, address

J. J. MILLER,
Benton Harbor, Mich.

FOR SALE

New Sand Lime Brick Hardening Cylinder, 6 feet diameter by 68 feet long. One removable head. Immediate shipment.

FRANKLIN BOILER WORKS CO.,
Troy, N. Y

PLANT FOR SALE

Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capacity, practically new. Brand new soft mud outfit, including steam dryer. 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7.00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles. Cheap fuel and labor; can operate with steam dryer year around. Improvements have cost $16.000, but I am not a brickmaker and to the right party will sell low and easy payments

W. L. JONES,
Lock Box 5, Williamsburg, Va

THE BOSS SYSTEM OF BURNING BRICK

Involves the ORIGINAL PRINCIPLE of applying AIR UNDER PRESSURE.

Applies to Any Style of Kiln.

Absolute Control of Heat in Kiln.

WRITE FOR CATALOG

40% Reduction in Fuel Cost.

Burns All First-Class Hard Brick.

JOHN C. BOSS OFFICE: MONGER BLDG. **Elkhart, Indiana**

Do Your Brick Turn White?

HERE IS THE REMEDY.

PRECIPITATED

Carbonate (K.B. C.F.H.) of Barytes

The only preventative for scum and discoloration on facing Brick and Terra Cotta; neutralizing the Sulphate of Lime in the Clay and Water.

Circulars and Particulars on Application.

GABRIEL & SCHALL

205 Pearl Street NEW YORK P. O. Box 1712

RICKETSON'S MORTAR COLORS — MILWAUKEE, WIS.

They Never Fade

Twenty long years of time and weather have tried out Ricketson's Famous Red Brick" Brand

..COLOR..

for Mortar, Brick, Cement, Stone, etc., Proves it Absolutely Permanent. Red, Brown, Buff, Purple, Black.

RICKETSON MINERAL PAINT WORKS
MILWAUKEE, WISCONSIN.

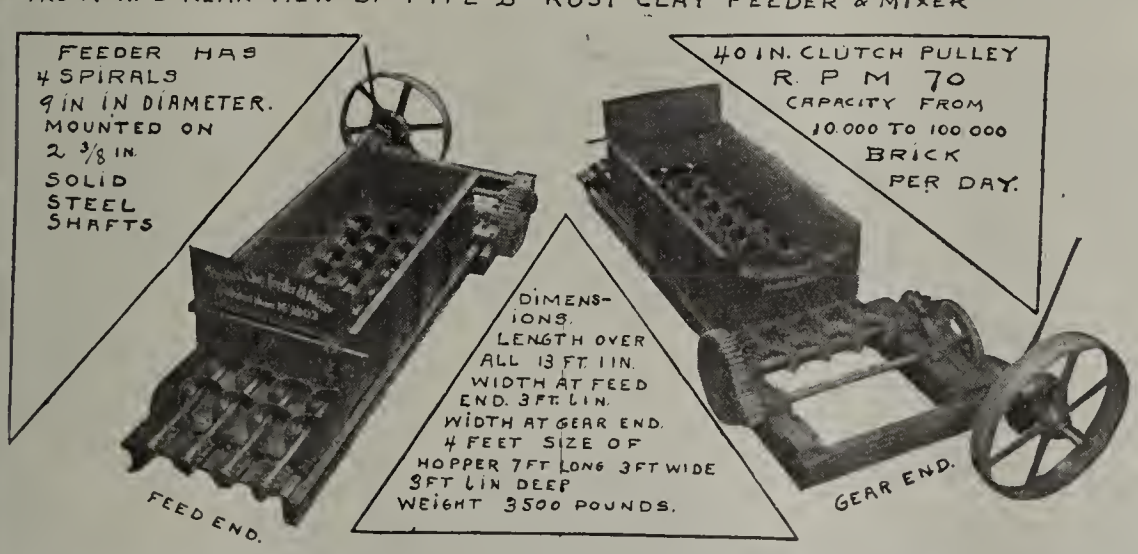
C. K. WILLIAMS & CO.

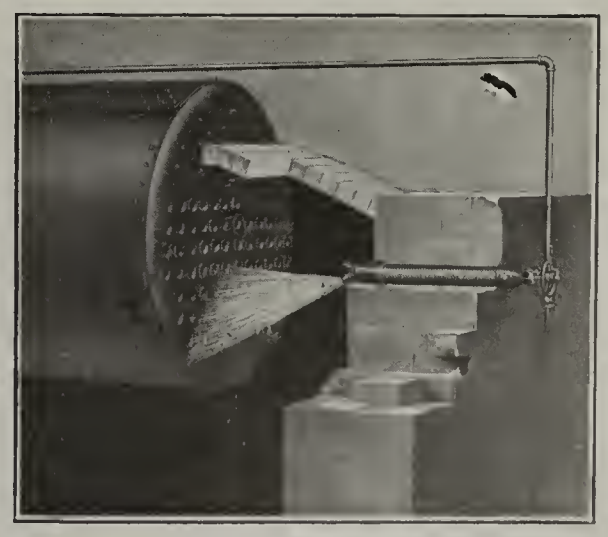
EASTON, PA.

BRICK AND MORTAR

COLORING

"FRONT AND REAR VIEW OF TYPE "B" RUST CLAY FEEDER & MIXER"





Don't Let Your Profits Run Away

We can save you from $500.00 to $1,000.00 per year, through the use of this modern Clay Feeder.

Write today for our latest catalog fully describing this new **Clay Feeder and Mixer.**

The Marion Flue Blower, (patented February 23, 1909) will save 10 per cent of your fuel. It will insure you clean tubes; will prolong the life of the boiler; it will prevent the accumulation of soot; it will save the cost of steam hose; it will enable you to clean your boiler while in commision. The accompanying cut shows how the Flue Blower is installed in the rear wall of your boiler. Each blower is fitted with a nozzle which rotates, and each opening in the nozzle blows a section of the boiler tubes at a time. We furnish different sizes as required, and positively guarantee to blow each flue clean.

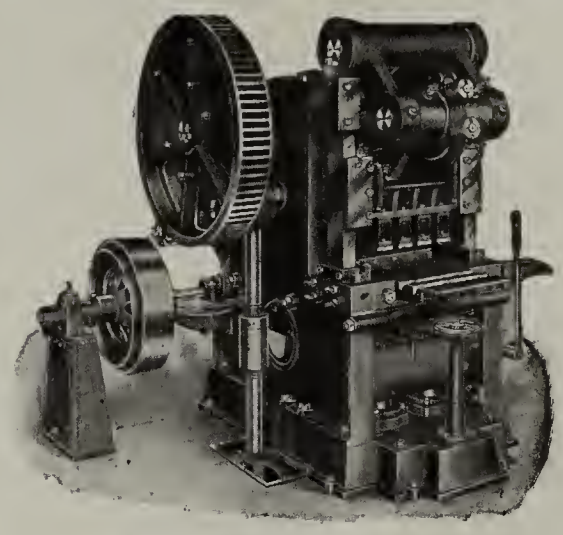
Please send for our latest catalog fully describing this useful invention.

MARION MACHINE FOUNDRY AND SUPPLY CO., - Marion, Inndiana

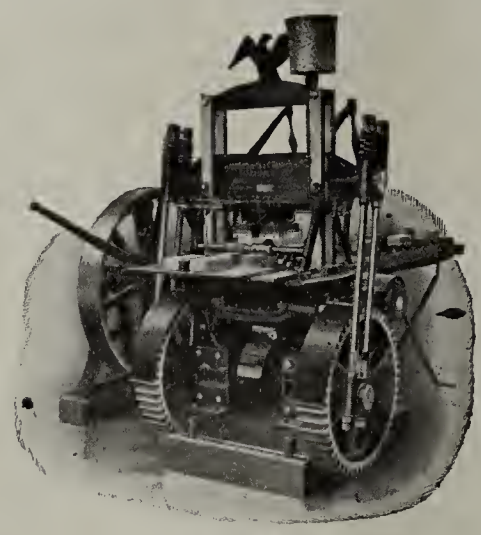
THE AMERICAN CLAY MACHINERY COMPANY

BUCYRUS OHIO, U.S.A.

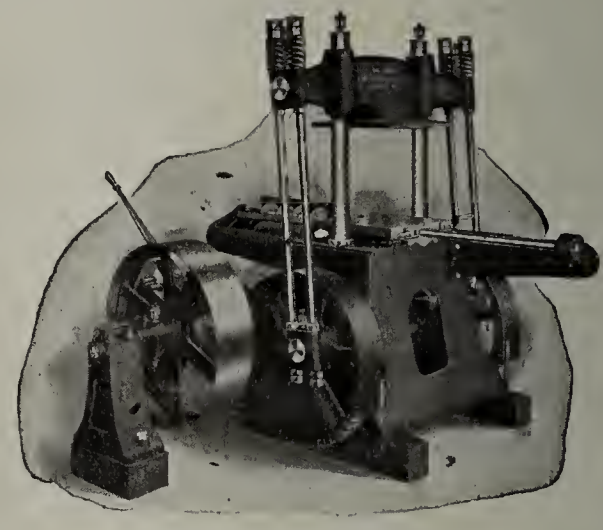
BUILT RIGHT RUN RIGHT



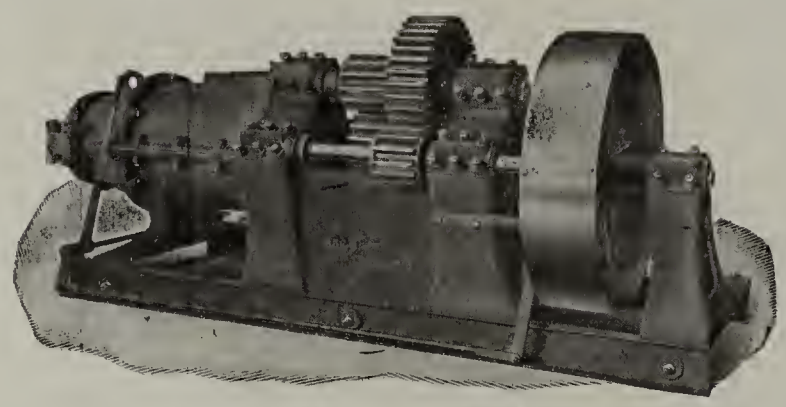
Model "B" Dry Press



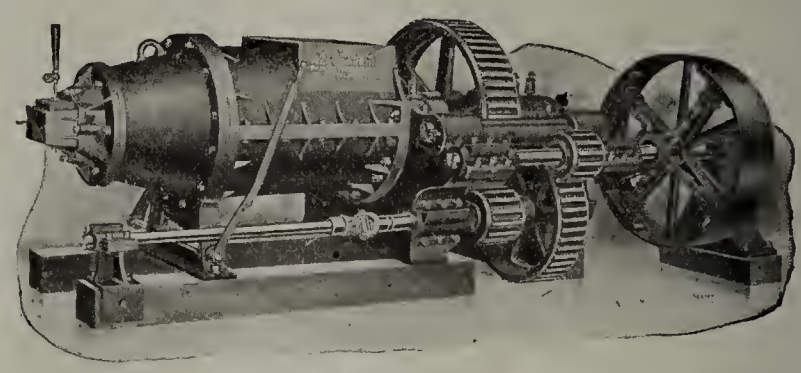
Eagle Repress



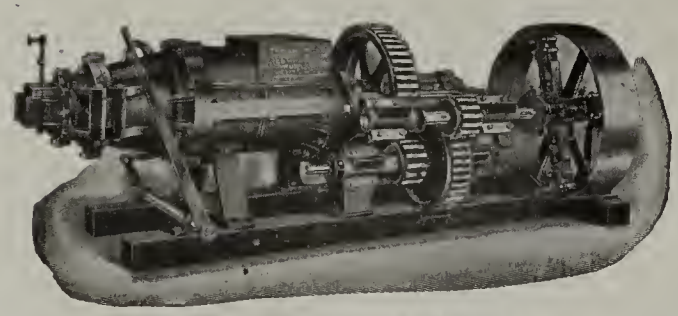
Roofing Tile Press



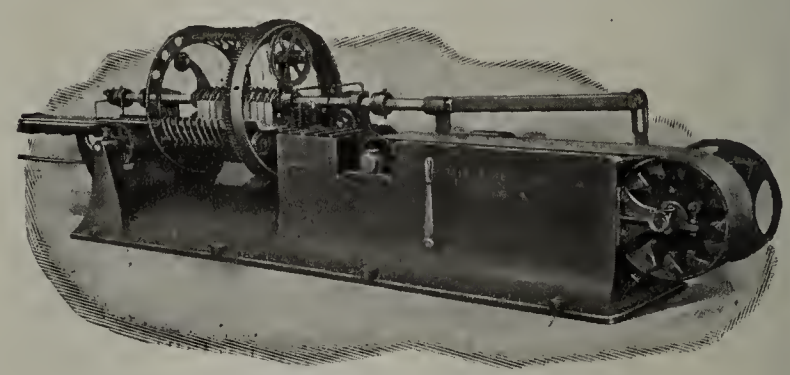
No. 65 Auger Brick Machine



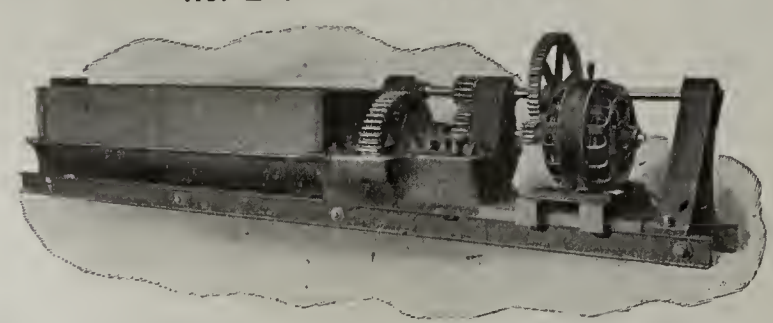
Special Giant Brick Machine



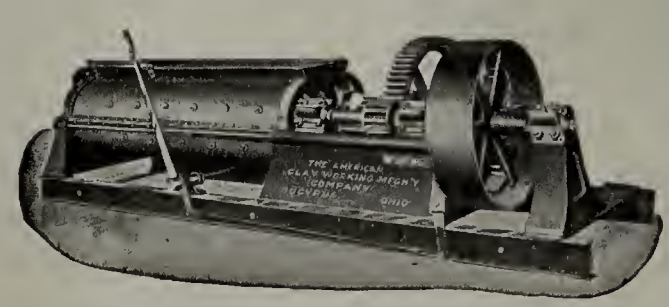
No. 2 Giant Brick Machine



No. 83 Automatic Cutter



No. 51 Electrical Driven Pug Mill



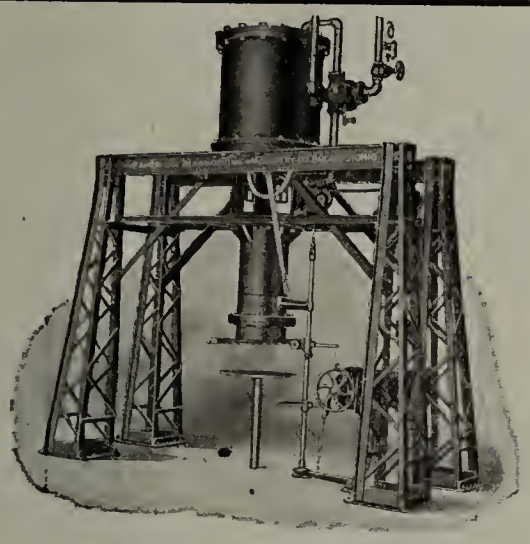
No. 38 Double Shaft Pug Mill

We Build Every Machine and Every Appliance Needed for the Manufacture of Every Class of Clay Products by Every Process

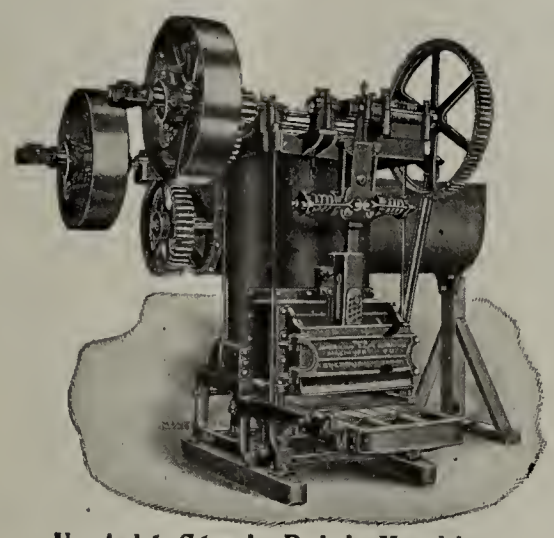
THE AMERICAN CLAY MACHINERY COMPANY

BUILT RIGHT RUN RIGHT

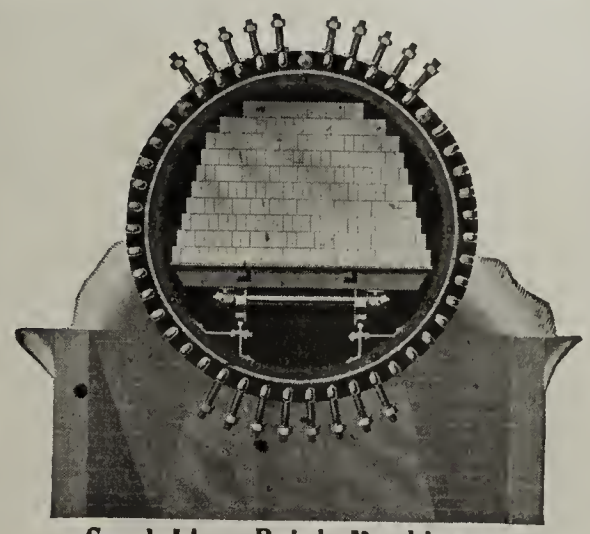
BUCYRUS OHIO, U.S.A.



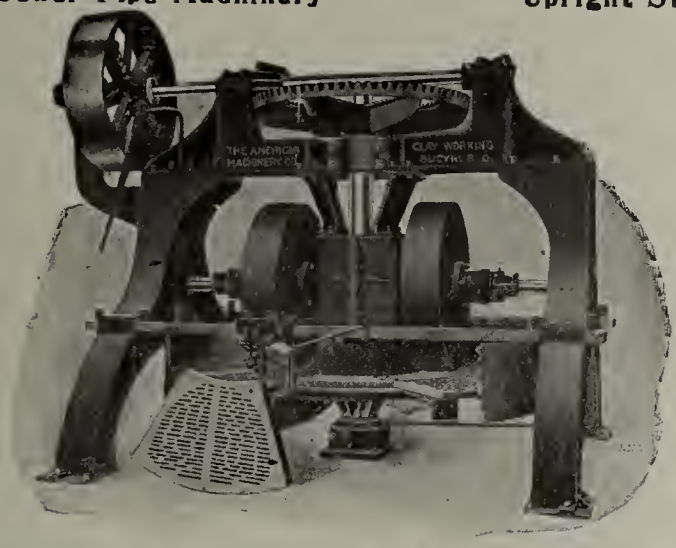
Sewer Pipe Machinery



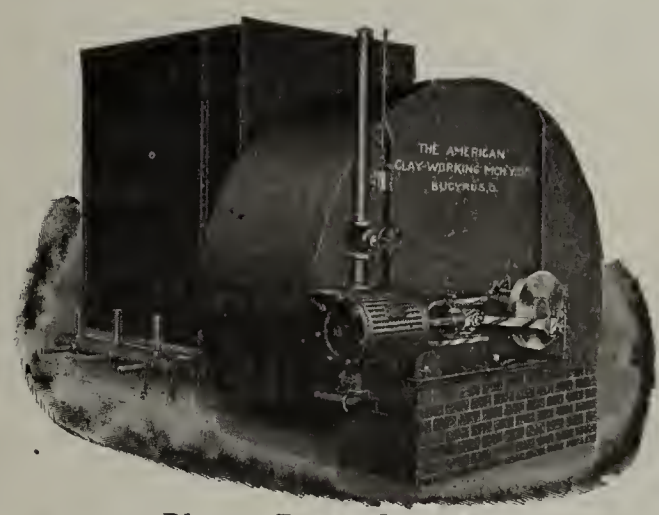
Upright Stock Brick Machine



Sand-Lime Brick Machinery

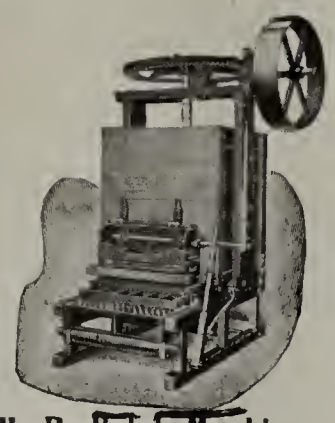


9 Foot Dry Pan

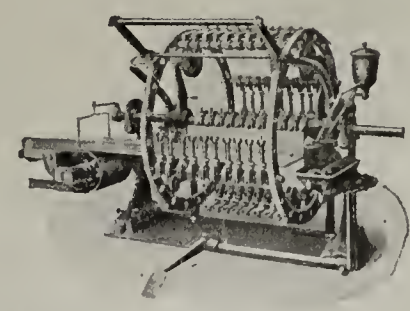


Blower Dryer Apparatus

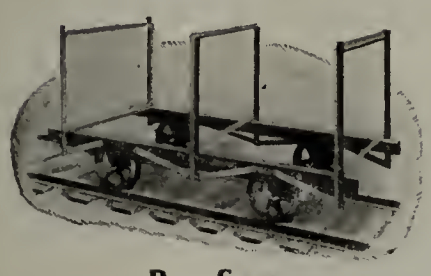
Mold Sander



H. P. Brick Machine



No. 62 Hand Power Cutter



Dry Cars

Disintegrators

Winding Drums

We are Much the Largest and Much the Most Extensive Manufacturers of Much the Best Clay Working Machinery in the World

Fire Brick——Fire Clay

AND FIRE CLAY PRODUCTS

Manufactured out of highest grade Missouri semi-flint fire clay.
A large stock of Number One brick and shapes always on hand.
Let us quote you prices and we will save you money.
Samples sent upon request. Address

Mexico Brick & Fire Clay Co.

MEXICO, MISSOURI

Something New In Brick Kilns and Dryers

The Dennis Double Chamber Up and Down Draft Brick Kilns and Direct Heat and Hot Air Brick Dryers show many new features that make them superior to all others. Economical, durable and strong in construction and operation, having many points of dvantage that appeal to practical brickmakers. Patented April 14, 1903 and September 8. 1903 Brick plants installed and put in operation. Write for booklet. Correspondence solicited.

F. W. DENNIS,
145 Water St.. Norfolk, Va.

Approved and Labeled

Fire! Fire!! Fire!!!

Extinguishers

Protect your Home, Business, Factory

Insurance Reduced. Child can Operate.
Made of Copper. Will Last a Lifetime.

Chemical charges can be procured at any drug store

Write today; don't wait; delays are dangerous.

O. J. Childs Company

Sole Manufacturers — Utica, N. Y.

AMERICAN RING-HAMMER PULVERIZER

Two Models, one for Clay, Shale, one for Rock

Will pulverize from 4 mesh to 200 mesh, 1 to 50 tons per hour, according to size of machine. fineness required, kind and condition of material.
30% to 60% less 3peed, and 25% to 50% less power, due to the RING and its utilization of CENTRIFUGAL FORCE.
We make six sizes and every machine guaranteed to do the work which it is contracted to do when sold.

Revolving Screens Air Separators
Ask for Circulars and Information

AMERICAN PULVERIZER CO.

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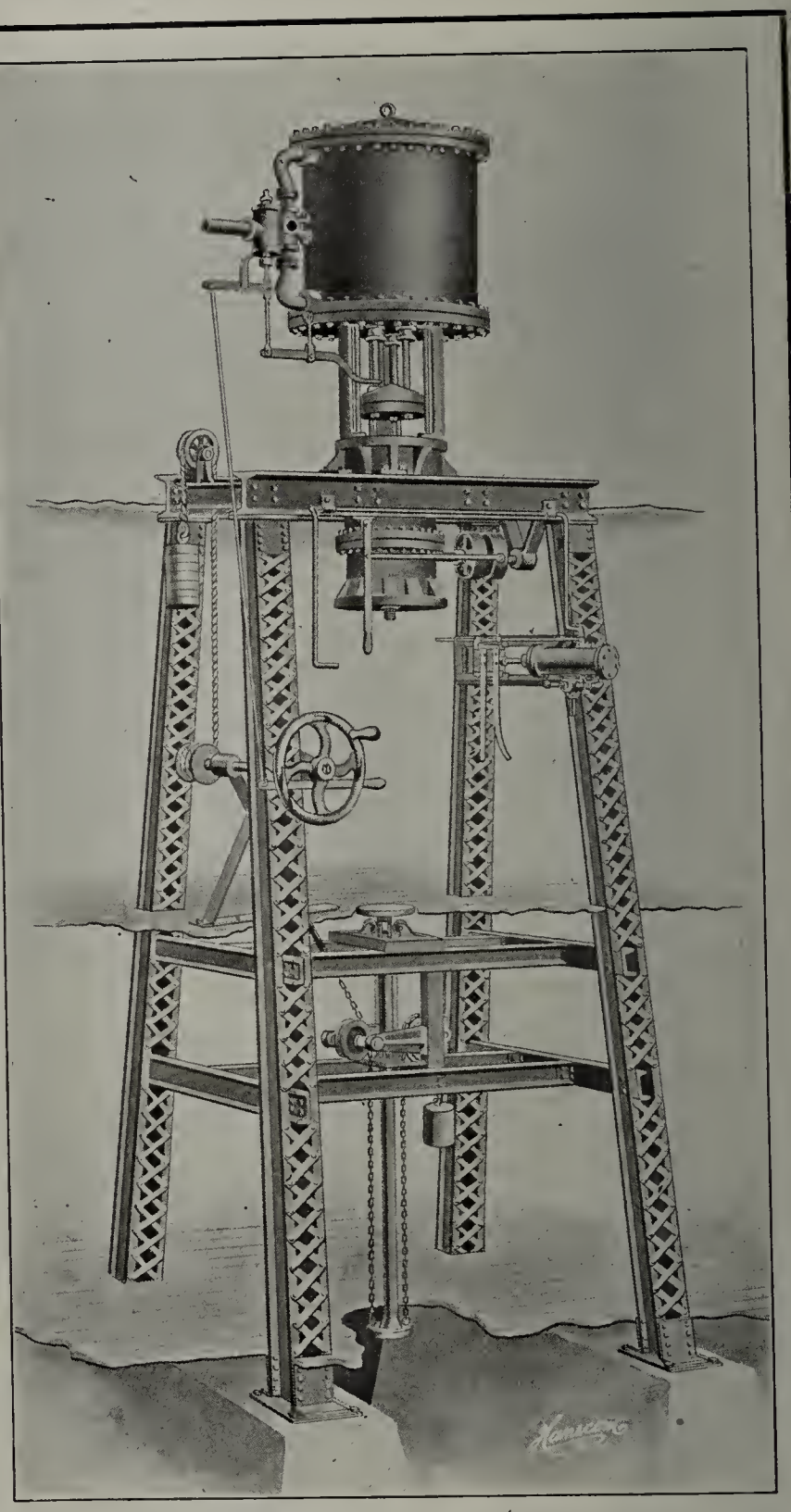
DISTRICT SALES OFFICES:
F. C. Willis. 36 LaSalle St., Chicago, Ill.
I. R. Coles & Co., 39 Cortland St., New York City.
Lindrooth. Shubart & Co., Boston Bldg., Denver, Colo.



44 X 20 SEWER PIPE PRESS

SEWER-PIPE MACHINERY

COMPLETE EQUIPMENT

THE TURNER, VAUGHN & TAYLOR COMPANY

CUYAHOGA FALLS, O.

REBUILT ENGINES AND BOILERS

The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

ENGINES—Automatic—16x32 Buckeye, 15x14 Erie, 14¼x16 Buckeye, 14½x14 Ball & Wood, 13½x15 Taylor, 13x16 Erie, 12x14 Green, 12x12 N. Y. Safety, 10x10 Fisher, 9½x12 Leffel, 8x10 Allfree, etc.

ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

BOILERS—Stationary—72x18 High Pressure, 72x18 Standard, 72x16, 66x16, 60x20, 60x16, 54x16, 54x14, 54x12, 48x16, 48x14, 44x14, 40x12, 40x9, 36x16, 36x10, etc.

BOILERS—Fire Box—80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 h. p., etc.

BOILERS—Vertical—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 3 h. p., etc.

HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

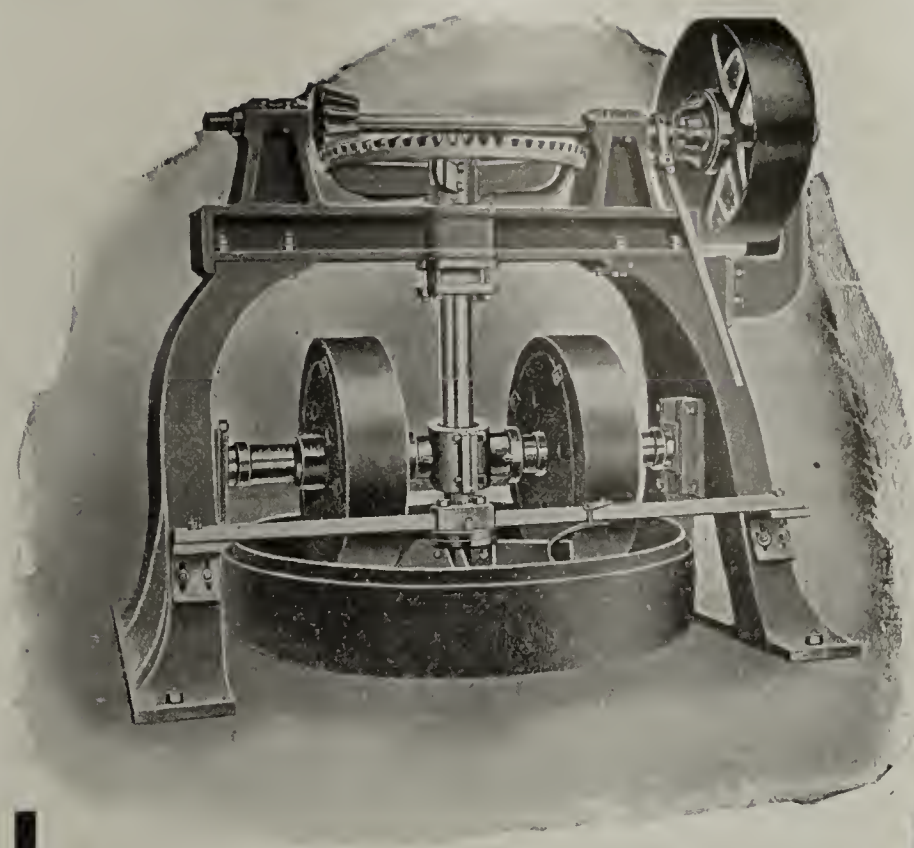
Saw Mills, Lath Mills, Edgers, Cut-Off Saws, Tanks, etc. Write for list.

Also full assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

The Randle Machinery Co.

1732 Powers Street **Cincinnati, Ohio**



PHILLIPS & McLAREN CO. PITTSBURG, PA.

BUILDERS OF

Pittsburgh Standard Dry and Wet, Revolving and Stationary Grinding Pans for Brick, Cement, Sand, Terra Cotta and all kinds of Refractory Materials.

ROCK AND ORE CRUSHERS

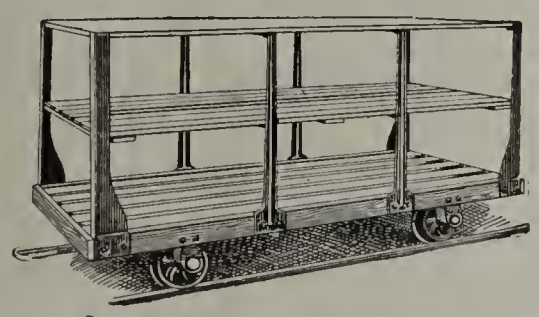
When writing for prices state kind of material and capacity required.

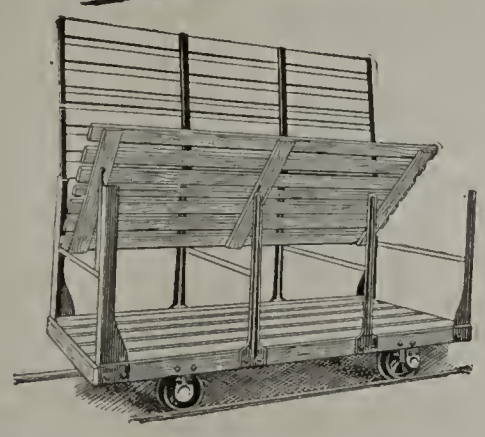
Eastern Offices

Stephen Girard Building, Philadelphia, Pa.

The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices





Vulcan Iron Works MASON CITY, IOWA

"A CHANGE IN FLUES MAKES THE DIFFERENCE IN DRYERS"

POTOMAC BRICK COMPANY

1413-G Street, N. W.

ELLIOTT S. MORSE, Gen. Mgr.

Washington, D. C., March 19, 1909.

THE KING ENGINEERING CO.,
Richmond Va.

Gentlemen:—Our No. 1 10-tunnel Sharer Radiated heat dryer before it was remodeled by you gave us an average of 55 cars per day of dry brick.

You completed the reconstruction of this dryer the latter part of January last. This day we have examined our records and find that our daily average now is 80 cars dry brick.

Yours very truly,

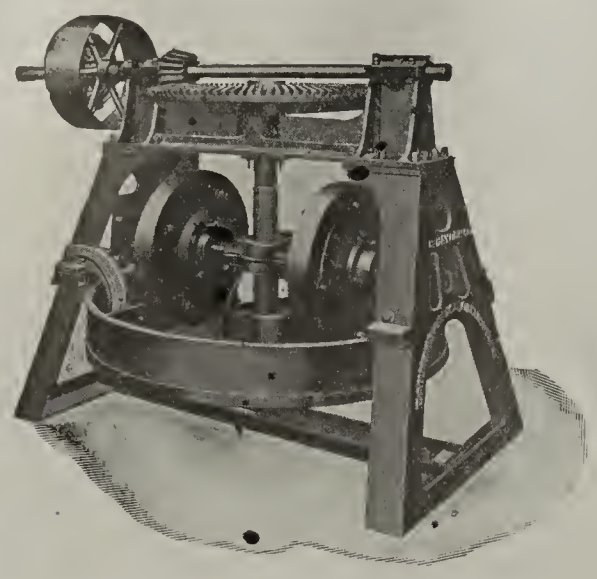
(Copy) ELLIOTT S. MORSE.

That which we have done for the above Company **we can do for You.** We can remodel **any** Radiated heat dryer **and increase its capacity** from 15 to 30 per cent.

THE KING ENGINEERING COMPANY

RICHMOND, VA.

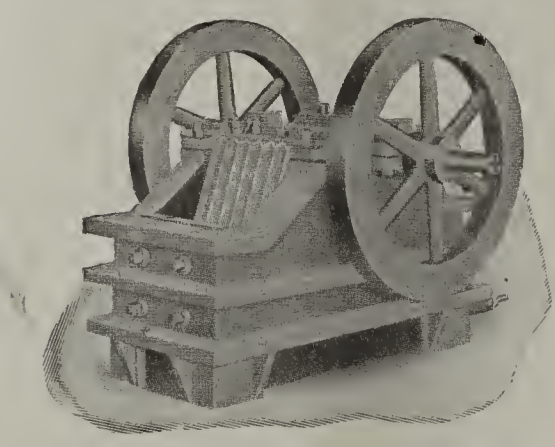
THE HAYDEN DRY PAN.



Masssive and well proportioned.
Best material.
Time tried and reliable.
Large capacity.
Acurate mechanism.
Independent or yoked mullers.

Send for specifications and prices before buying.

THE HAYDEN CLAY CRUSHER



This Crusher is specially designed and adapted for use as an auxiliary to the dry pan.
Capacity 10 to 30 tons per hour.
Simply constructed and the strongest machine of the kind on the market.

Send for circular and prices.

THE HAYDEN
BRICK TESTING RATTLER

For testing paving brick.
Built to the standard specifications of the N. B. M. A.
Best material and workmanship.

Send for descriptive matter.

The P. HAYDEN S. H. CO., Foundry and Machine Dept.

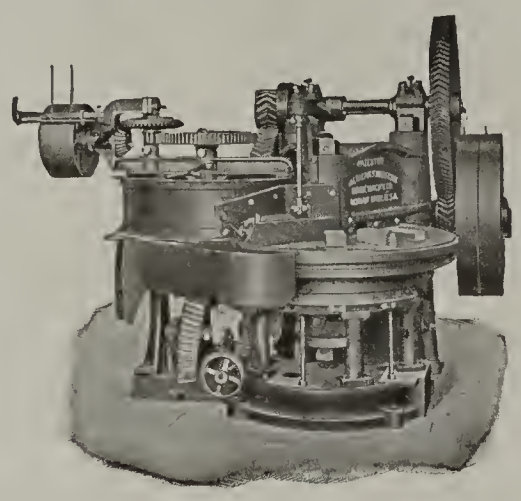
Manufacturers of

WET AND DRY PANS, CLAY CRUSHERS, STEAM CLAY PRESSES, RATTLERS, BRICK CARS, CARWHEELS, AXLES, KILN BANDS, etc.

112 West Broad Street **COLUMBUS, OHIO**

The American Sandstone Brick Machinery Co.

INCORPORATED APRIL, 1902
SAGINAW W. S., MICH.



Improved Saginaw Rotary Presses

Are now being built with extra table for making fancy brick, on which double pressure is exerted.

Don't confuse our Practical System with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant, starting and operating at our expense until at least 100,000 brick are made before asking for a settlement.

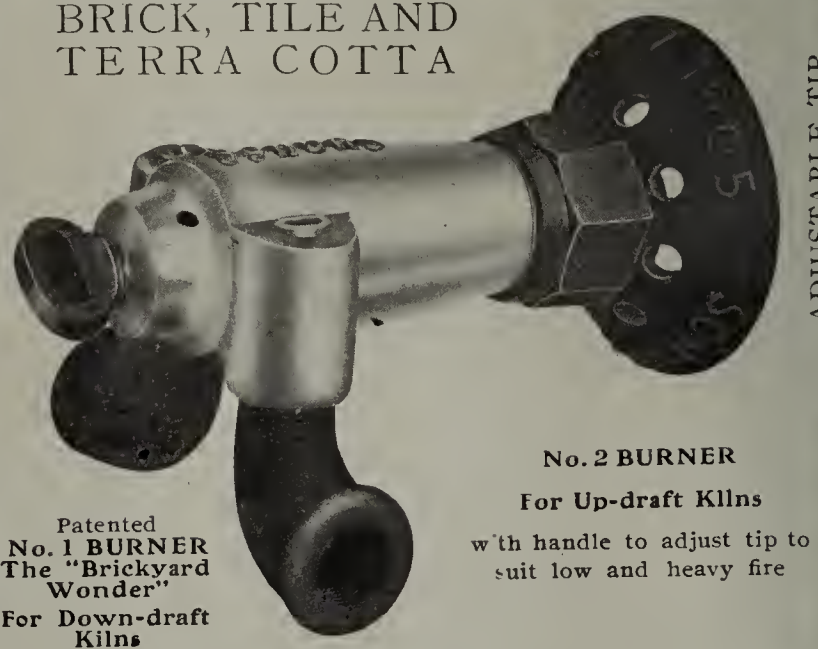
Our plants are **installed under the supervision of Practical Engineers who know how Sand-Lime Brick should be and can be made.** We have **Practical Plants Running Successfully** to show to prospective investors.

WE ARE NOT SCIENTISTS

We **Produce Results,** because we are the **Oldest Practical Sand-Lime Engineering Company Doing Business in the United States,** and **we defy contradiction.**

SCHURS Perfected Oil Burners

MOST ECONOMICAL BURNERS ON THE MARKET. DESIGNED ESPECIALLY FOR BURNING BRICK, TILE AND TERRA COTTA



Patented
No. 1 BURNER
The "Brickyard Wonder"
For Down-draft Kilns

No. 2 BURNER
For Up-draft Kilns
with handle to adjust tip to suit low and heavy fire

Not an experiment, but a severely tested, well proved burner whose superiority to all others has been amply demonstrated.

Write for Booklet containing full information.

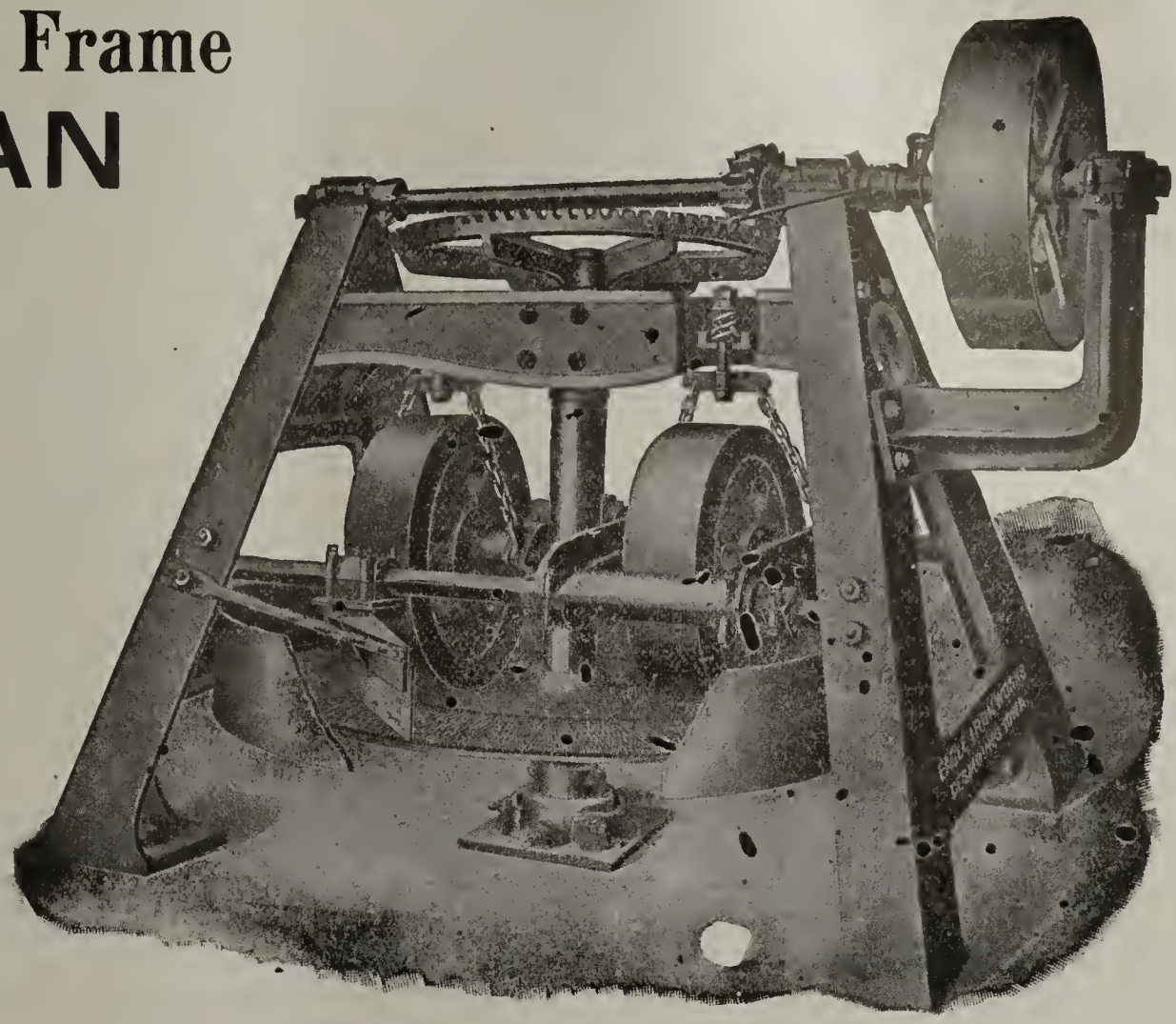
JOHN SCHURS, Patentee and Manufacturer
1007 NORTH MAIN STREET **LOS ANGELES, CAL.**

Nine Foot Iron Frame
DRY PAN

With Independent
and Suspended

MULLERS

A well-tried and
proven Success.



EAGLE IRON WORKS, BUILDERS, DES MOINES, IOWA

Steel Brick Pallets

Built Right,

Price Right,

Write Us

STYLE No. 4.

The only Steel Bench Pallet that can be stacked without slipping. They Interlock. Light, Strong, Rigid. (Patented.)

ALL STYLES

MADE EXCLUSIVELY BY

THE OHIO GALVANIZING & MANUFACTURING CO.

NILES, OHIO

PAUL FUCHS

Manager of the Excelsior Granite Brick Co. -:- Specialist for the Sand-Lime Brick Industry

Inventor of a New Process for Making "GRANITE BRICK"

My system enables the manufacturer to turn out a sand-lime brick of a compression strength of 9,000 pounds per square inch from proper raw materials. Send in a one-pound fair average sample of your sand and a one-pound sample of your lime for examination.

Porcelain Enamel for Clay Brick

Forward, express charges prepaid, ten brick for testing purposes.

Special Enamel for Sand-Lime Brick

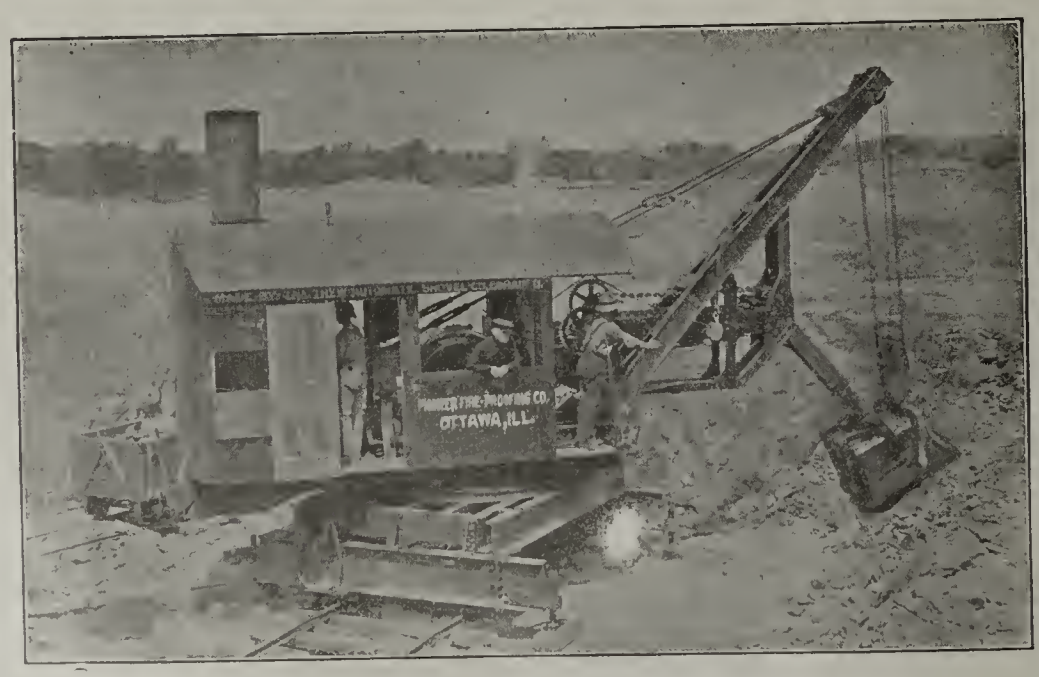
Send in as many brick as colors wanted and specify colors desired.

1747 CARMEN AVE. **Chicago, U.S.A.**

HANDLE YOUR CLAY WITH ONE MAN AND

The Thew Steam Shovels

Made in Four Sizes. Mounted on Car Wheels or Traction Wheels.



Type No. 2 Shovel—Pioneer Fireproofing Co., Ottawa, Ill.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adjusted to cut to any desired level.

: : Ouly One Operator Required.
Wire Cables used Instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickyards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

Write us for Catalogues and Information.

THE THEW AUTOMATIC SHOVEL CO.

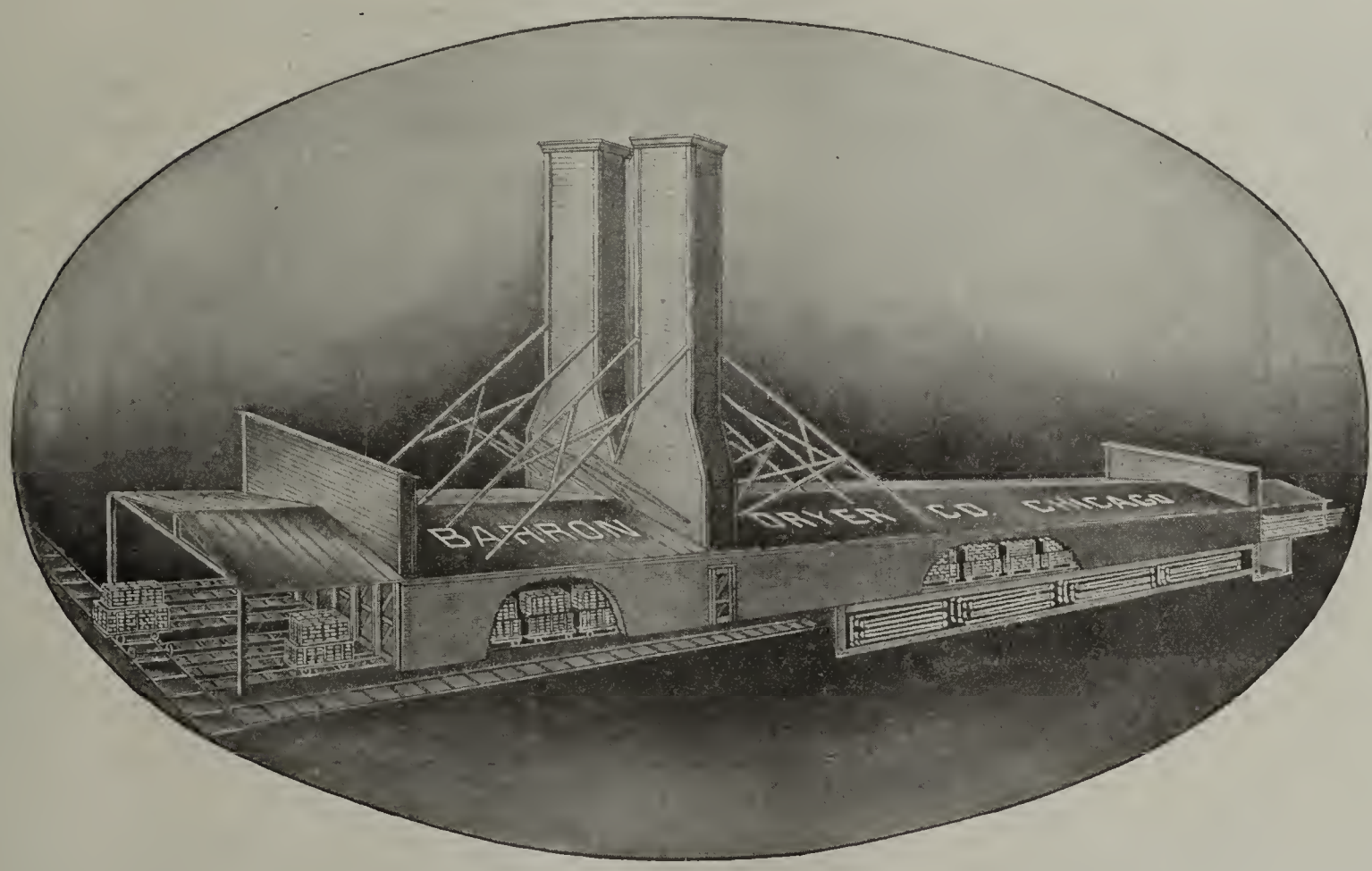
LORAIN, OHIO

BARRON DRYER COMPANY

Established 1879

MANUFACTURERS, PATENTEES and BUILDERS of the

CHICAGO IRON CLAD DRYERS
BARRON'S TENDER CLAY DRYERS



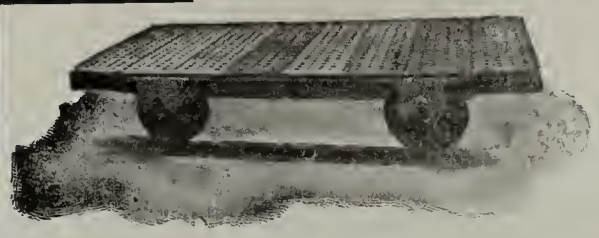
CARS, WHEELS, AXLES, DECKS, TURNTABLES
CASTINGS, FORGINGS, PIPE, VALVES, FITTINGS
RAILS, SPLICES, SPIKE, STRUCTURAL MATERIAL

OFFICE AND SHOPS **1335 SLOAN STREET** ON C. & N. W. RY. **CHICAGO**

THE "MARTIN" CLAY-WORKING MACHINERY

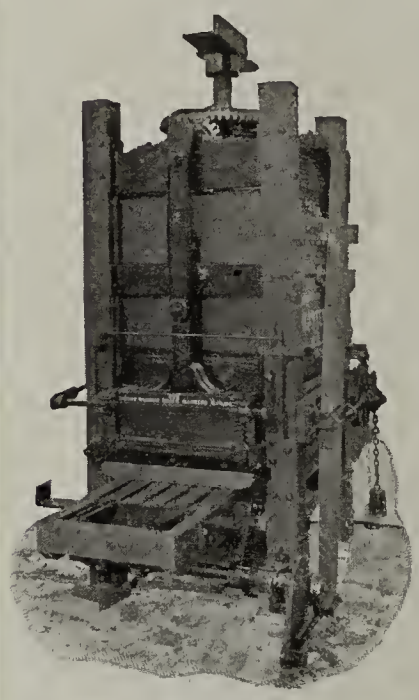
IS KNOWN THE WORLD OVER FOR

ITS SIMPLICITY DURABILITY AND COMPLETE SATISFACTION THROUGHOUT

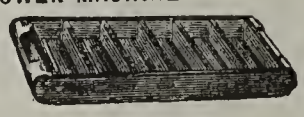


DRYER CARS

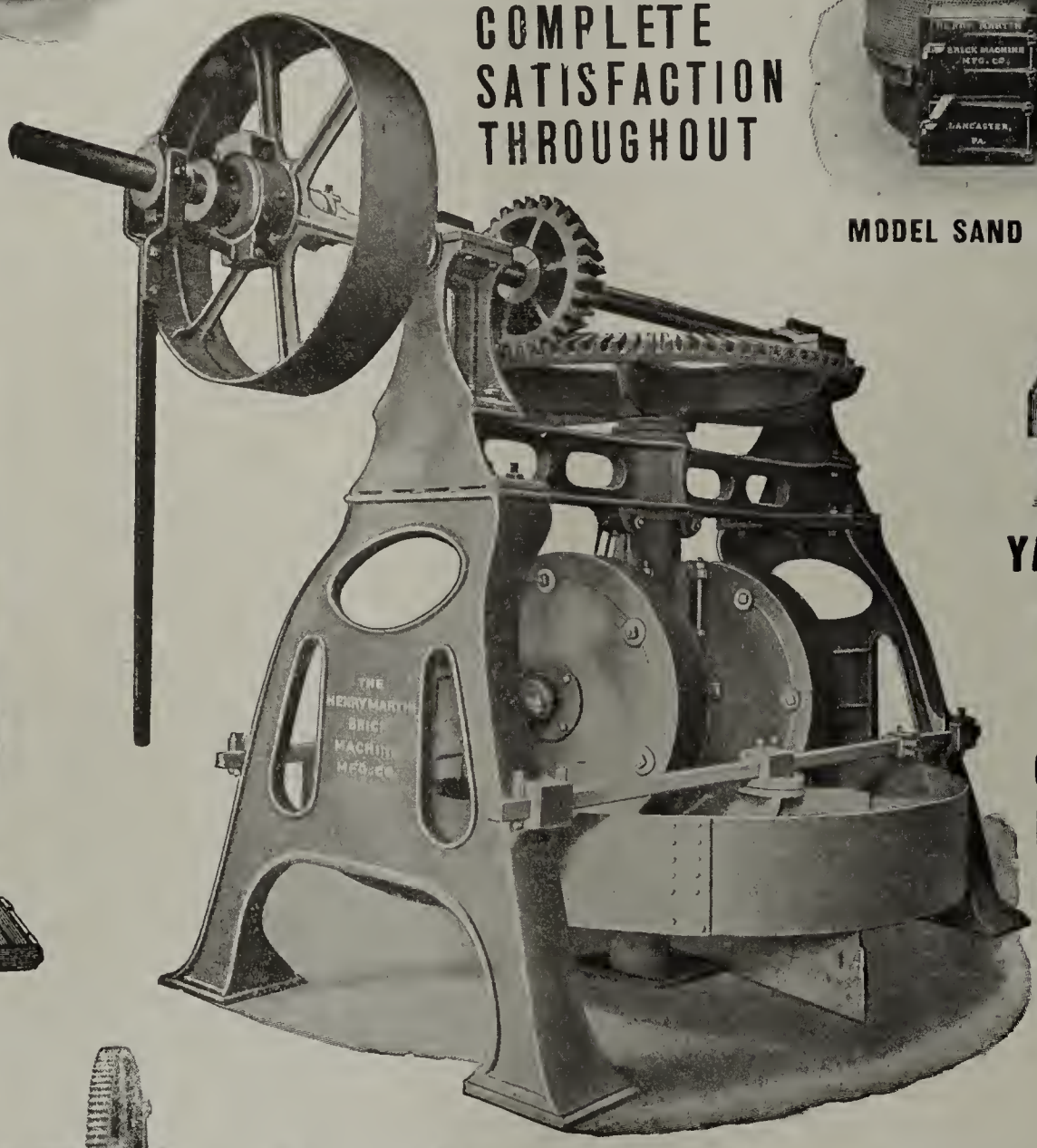
TRUCKS

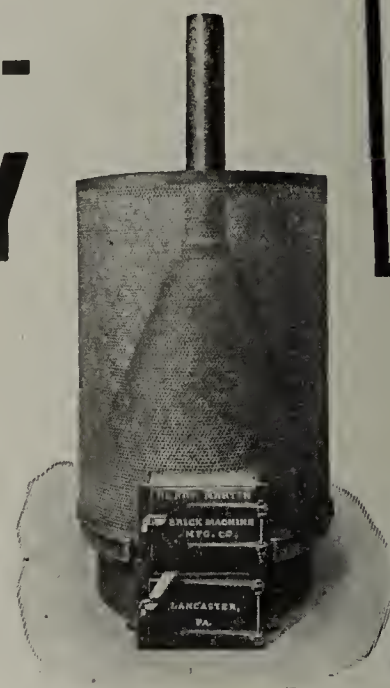


HORSE POWER MACHINE



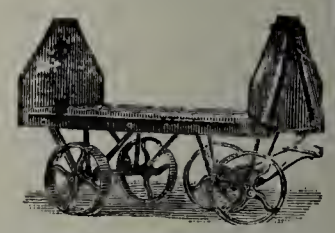
BRICK MOULDS THAT ARE BUILT FOR HARD USAGE IS THE "MARTIN." TRY A SET



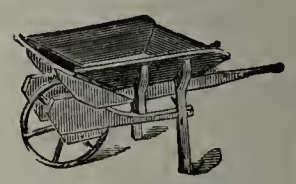


MODEL SAND DRYER

WE GUARANTEE OUR MACHINERY



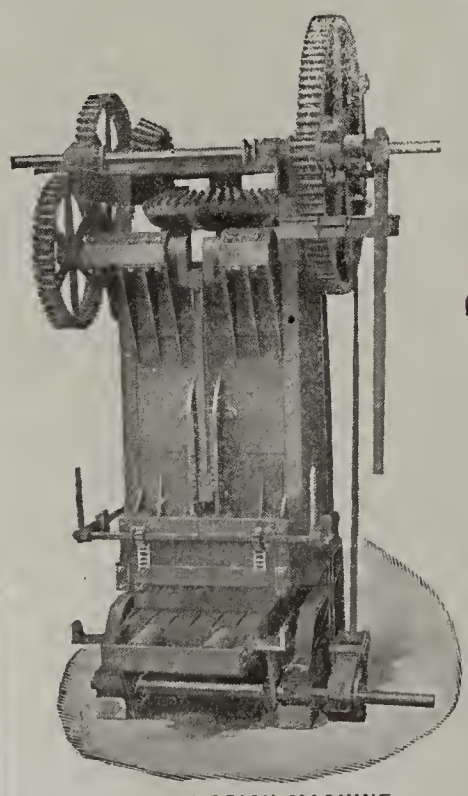
YARD SUPPLIES



OF ALL KINDS BUILT RIGHT

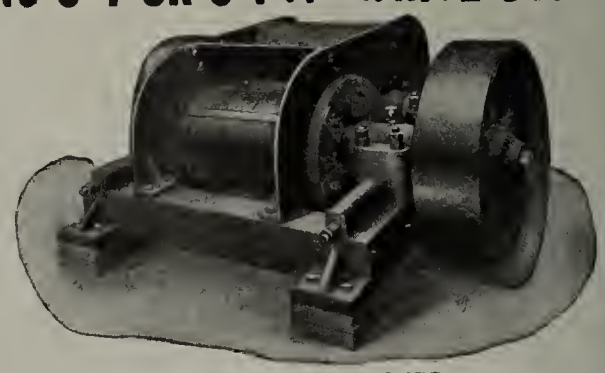
TRUCKS

WE BUILD DRY OR WET PANS 5-7 OR 9-FT. WRITE US.



STYLE "P" BRICK MACHINE

"WE FURNISH EVERYTHING THE BRICK-MAKER NEEDS"



STYLE "P" CRUSHER

MARTIN

CLAY-WORKING EHGINEERS & MACHINERY EXPERTS

LANCASTER, PENNA., U. S. A.

THE "MARTIN" STEAM BRICK "DRYING SYSTEM"

PATENTED February, 22d, 1898, No. 599509
October 10, 1905. No. 95520
November 14, 1905, No. 804489
May 26, 1908. No. 888831

This Dryer, and the design in arranging it, are under the protection of the United States Government by virtue of patents granted. Patents have also been taken out in all the principal foreign countries. We are the sole owners and control these important patents and have authorized NO ONE to manufacture or sell the "MARTIN"

RACK PIPE STEAM BRICK DRYERS

☞ YOUR BRICK DRY OVER NIGHT ☜

☞ LABOR SAVING THROUGHOUT ☜

From "Martin Patent System" Brick Dryer to Kilns

ADAPTED FOR SOFT-MUD OR STIFF-MUD BRICK

SUPERIOR IN EVERY RESPECT TO ANY OTHER SYSTEM—Labor Saving Throughout. Dispenses with Truckers and car Pushers. Pallets Automatically Return to Brick Machine. Quick to install and low in price, and takes up very little Yard room.

The sale and construction of the "Martin" Rack Pipe Steam Brick Dryer is under the direct supervision of the Factory Office at Lancaster, Pa.

FOR FURTHER INFORMATION, ADDRESS

THE HENRY MARTIN BRICK MACHINE MFG. CO., Inc.

LANCASTER, PA., U. S. A.

Silicate Brick Made by the "Division Method" Patented

THE PHILADELPHIA OPERA HOUSE

Built by Oscar Hammerstein and called the finest Opera House in the World. This beautiful building is faced with over 500,000 of our WHIE SILICATE BRICK, made under our patented process. These bricks were also used to line the wall at back of stage and also for the stairways.

The building seats 4,100 people and measures 240 feet on Broad Street and 160 feet on Poplar Street.

How would you like to make Brick suitable for Facing Buildings like this and do it cheaper than common brick can be made in any other way out of sand and lime?

We challenge any one to make as good a brick as we do by our process, and will allow him twice our cost.

The factory we built last year at Washington, D. C., is pronounced the most compact and cleanest known, and the product the finest brick produced.

WE CAN DO AS WELL FOR YOU. ASK US ABOUT IT AND LET US SHOW YOU

International Sand-Lime Brick & Machinery Company

Engineers and Contractors for Silicate Brick Factories

90 WEST STREET, NEW YORK, N. Y.

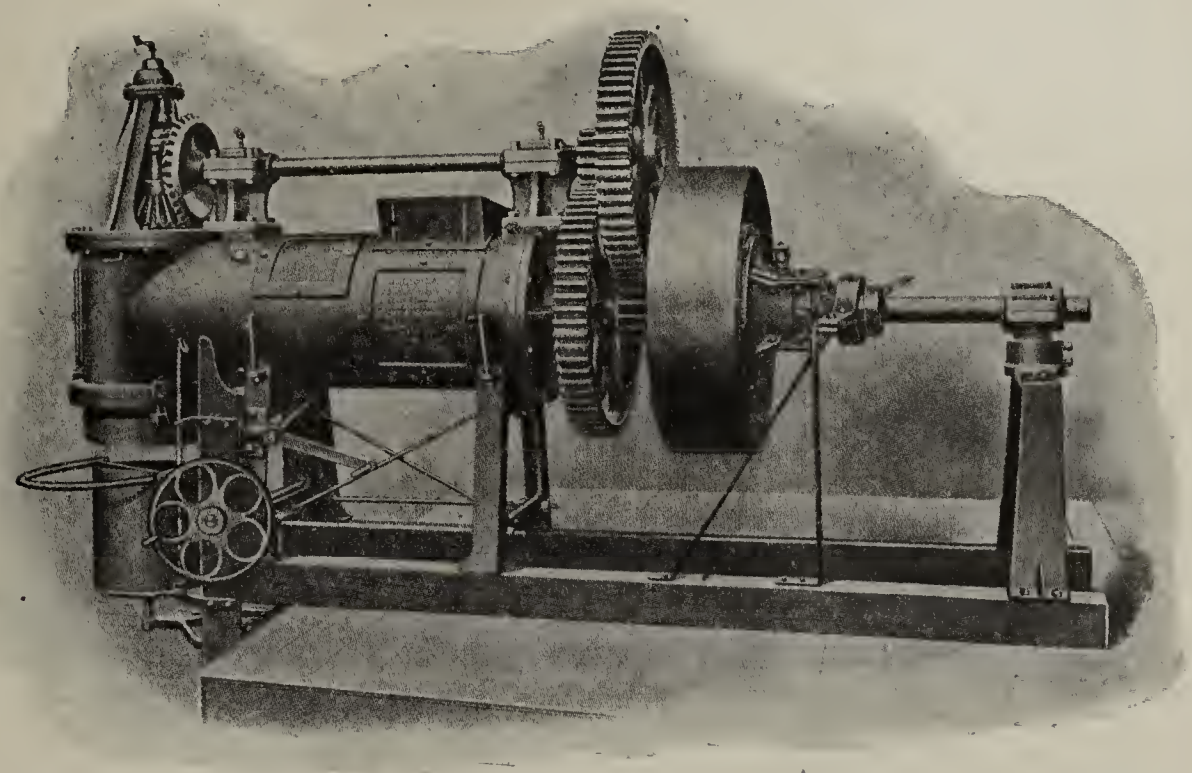
1908 NEW DEPARTURE

The Only Mill for Successfully Making Tile from 3-inch to 24-inch Diameter

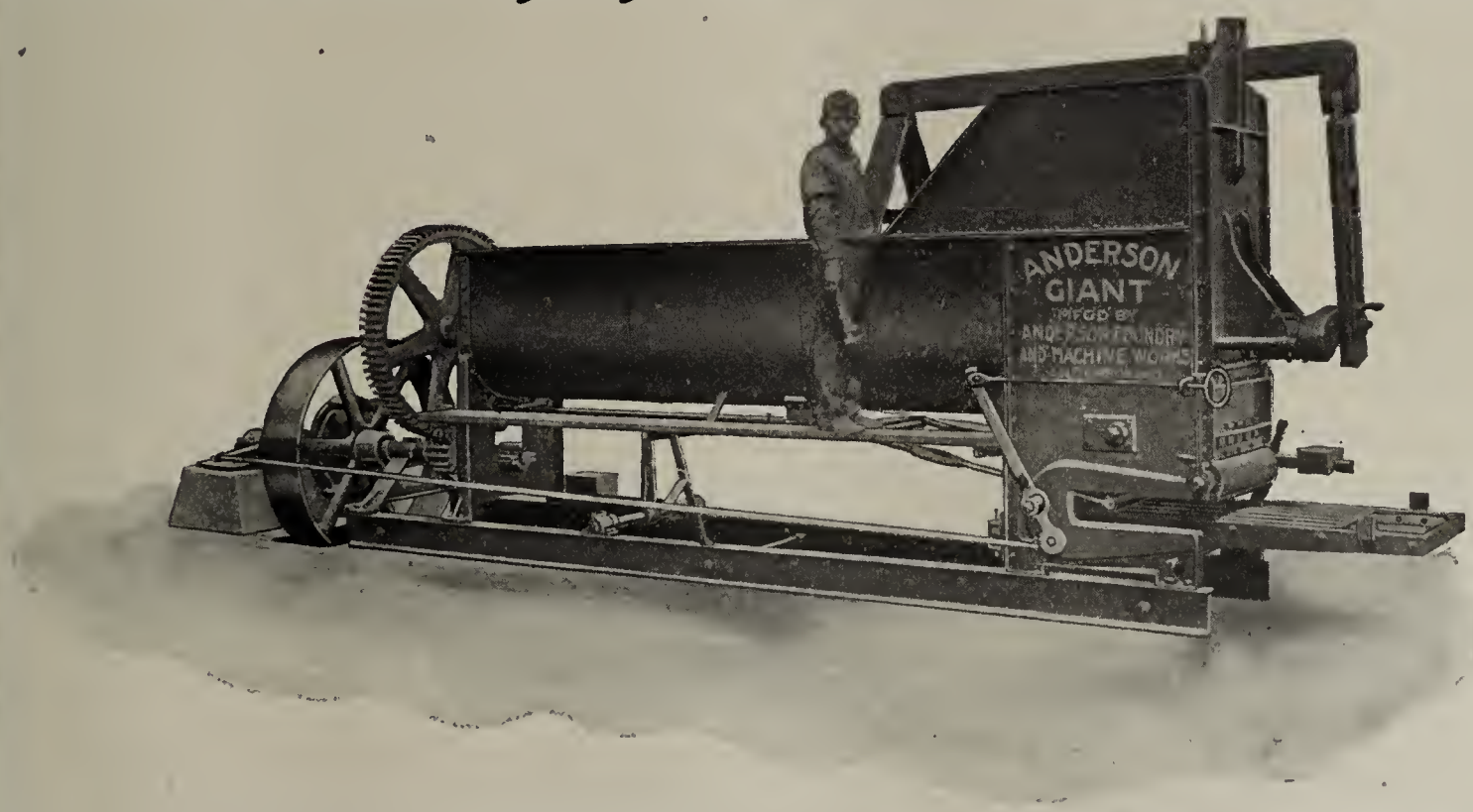
Greatly Improved in Strength and Convenience

Capacity Increased 60 per cent

Power Required to Operate, 40 per cent Less



Our New 1909 Model Anderson Giant



We also Manufacture a Complete Line of

Dry Press Brick Machinery and Brick Yard Supplies

Write us your needs and let us figure with you.

The
Anderson Foundry & Machine Works

Southwestern Office, Wilson Building, Dallas, Texas. ANDERSON, INDIANA

No. 217-E
Electric Side Dump Car

No. 145
Ball Bearing Turntable. Made in sizes from 4 ft. to 11 ft. in diameter.

No. 161-A
Gable Bottom Dump Car with trip and brake

CARS FOR BRICK YARDS, CEMENT WORKS, CONCRETE BLOCK MANUFACTURERS, STONE QUARRIES, ETC.

NO. 217-S
Either Side Rocker Dump Car.

TURNTABLES, TRANSFER CARS, DRYER CARS, TRACK, SWITCHES, BRICK PALLETS.

NO. 128
Heavy Double Deck Car-
Patent Malleable Iron Uprights.

NO. 142
Transfer Car.

NO. 129
Double Deck Car.

NO. 277
Steel Mine and Quarry Car.

The Atlas Car and Mfg. Co.

CLEVELAND, OHIO

VOL. 35 NO. 7

CLAY RECORD

A JOURNAL DEVOTED TO

THE DISSEMINATION

OF ALL MATTERS

PERTAINING

— TO THE —

CLAY INDUSTRY

October 15, 1909

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ANNOUNCEMENT

It is with pleasure that we inform you of our acquisition of the patents, business and good will of the Horton Manufacturing Company of Painesville, Ohio.

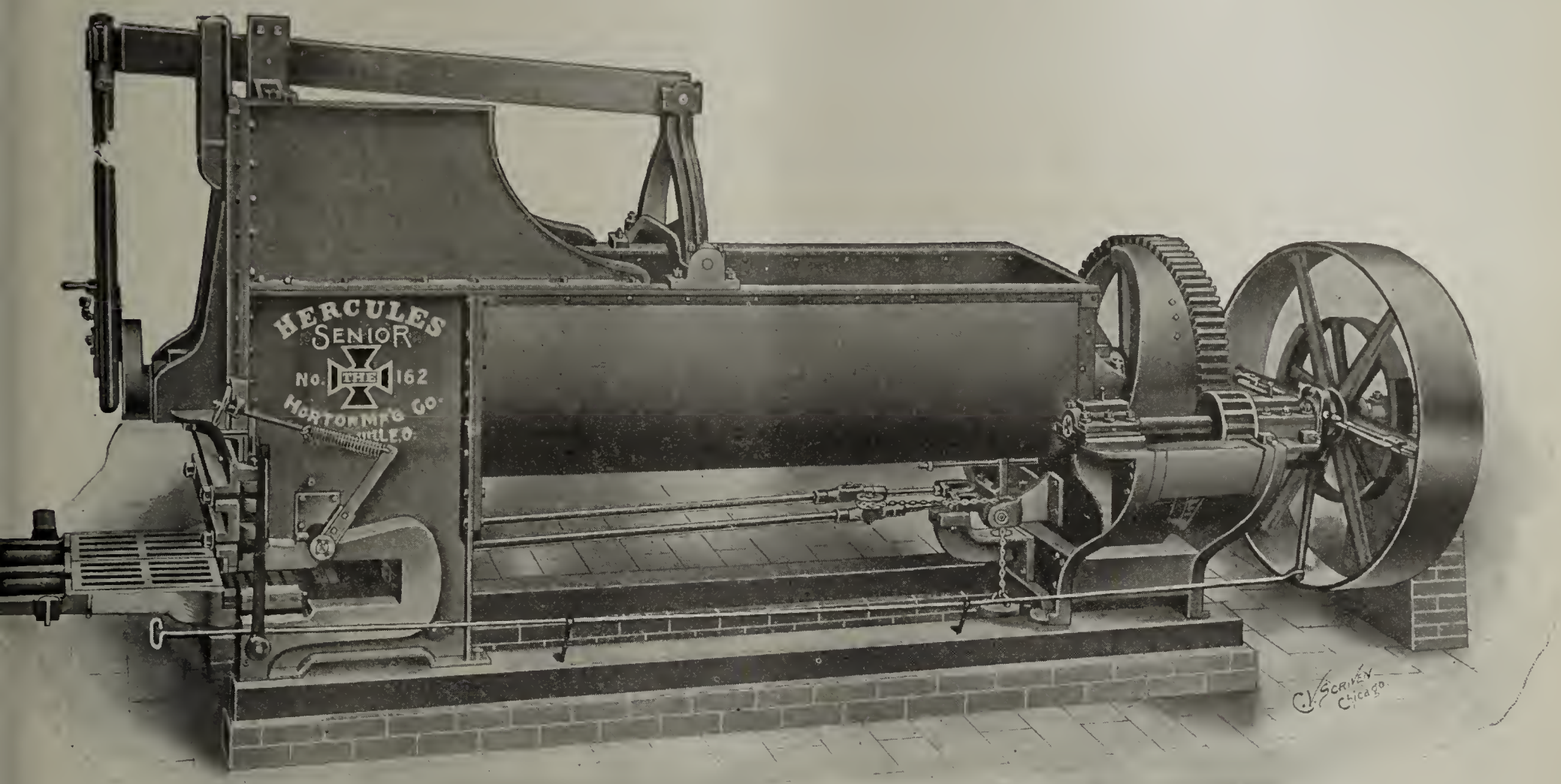
The Horton Manufacturing Company build the most complete and perfect line of Soft Mud Brick Making Machinery in the United States, which, added to our line of modern machinery, will constitute the strongest power in the world of Clay Working Machinery.

The new line will be christened the "Raymond-Horton" and is now placed before you as the embodiment of Soft Mud perfection.

THE C. W. RAYMOND COMPANY

DAYTON, OHIO, U. S. A.

The Raymond-Horton



The unification of the Raymond-Horton Soft Mud lines brings into being the magnificent results of the best thoughts on the subject. With all experiments made and every machine, with its efficiency demonstrated beyond the point where there is not the faintest shadow of a doubt as to its practicability.

The purchase is complete—every brick machine, sander, pug mill, disintegrator and all appurtenances will be manufactured at Dayton, Ohio.

New parts which may be from time to time required, will be supplied by us.

We are now ready to fill your orders for any of the Raymond-Horton line.

THE C. W. RAYMOND COMPANY

DAYTON, OHIO, U. S. A.

Silicate Brick Made by the "Division Method" Patented

THE PHILADELPHIA OPERA HOUSE

Built by Oscar Hammerstein and called the finest Opera House in the World. This beautiful building is faced with over 500,000 of our WHIE SILICATE BRICK, made under our patented process. These bricks were also used to line the wall at back of stage and also for the stairways.

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WE CAN DO AS WELL FOR YOU. ASK US ABOUT IT AND LET US SHOW YOU

International Sand-Lime Brick & Machinery Company

Engineers and Contractors for Silicate Brick Factories

90 WEST STREET, NEW YORK, N. Y.

The Andrus Brick Press Makes Brick Every Day

Been doing it 20 years.

Strong Simple and Capable.

24 in operation in St. Louis District.

INVESTIGATE

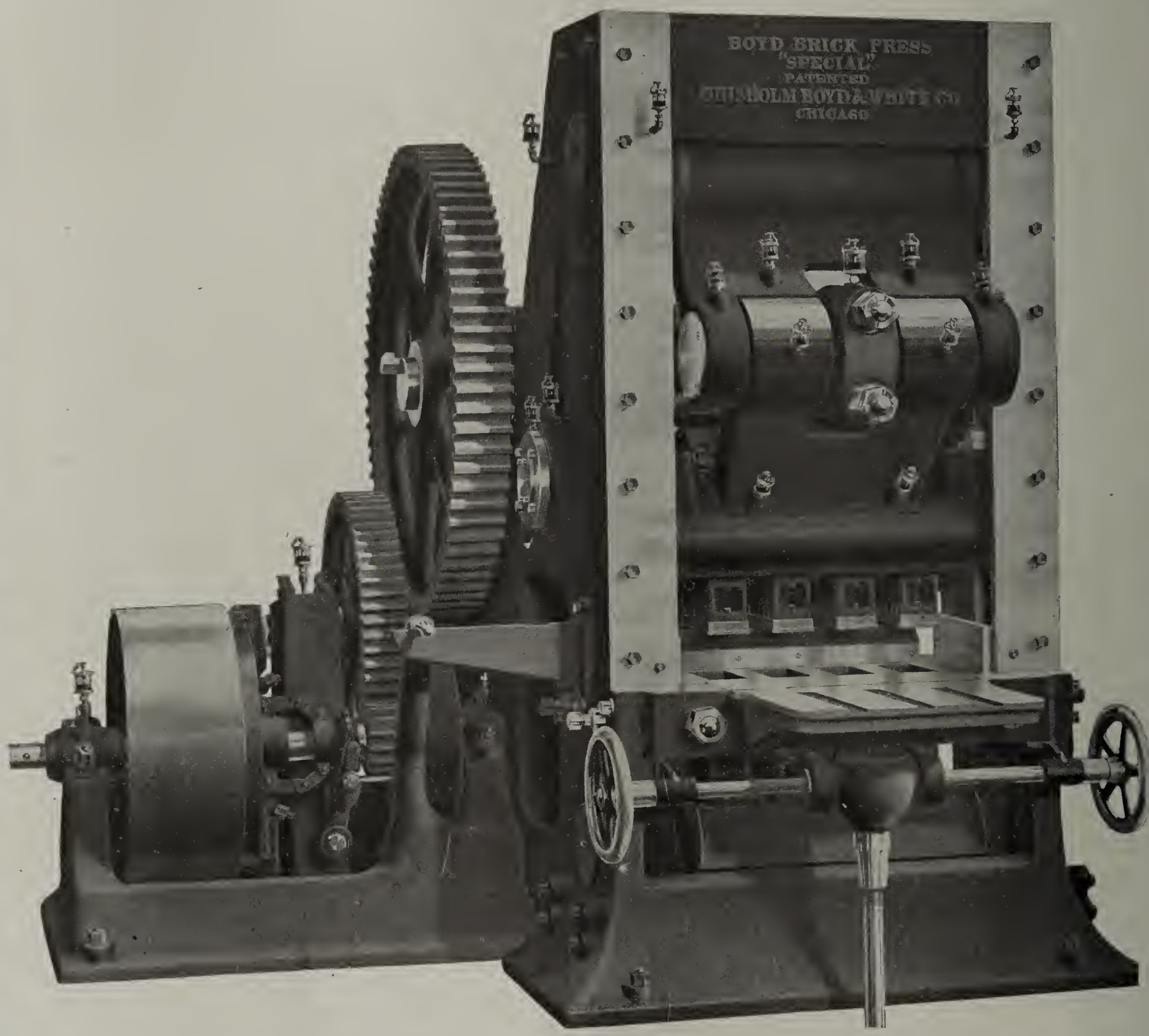
Scott Manufacturing Co.

1815 THIRD NATIONAL BANK BUILDING

ST. LOUIS ~ ~ MISSOURI

THE BOYD BRICK PRESS

Built in Two, Four and Six-Mold Sizes



FOUR-MOLD SPECIAL

BRICK PLANTS designed and complete machinery equipment furnished. More Boyd Presses in use than all other Press Brick Machines combined.

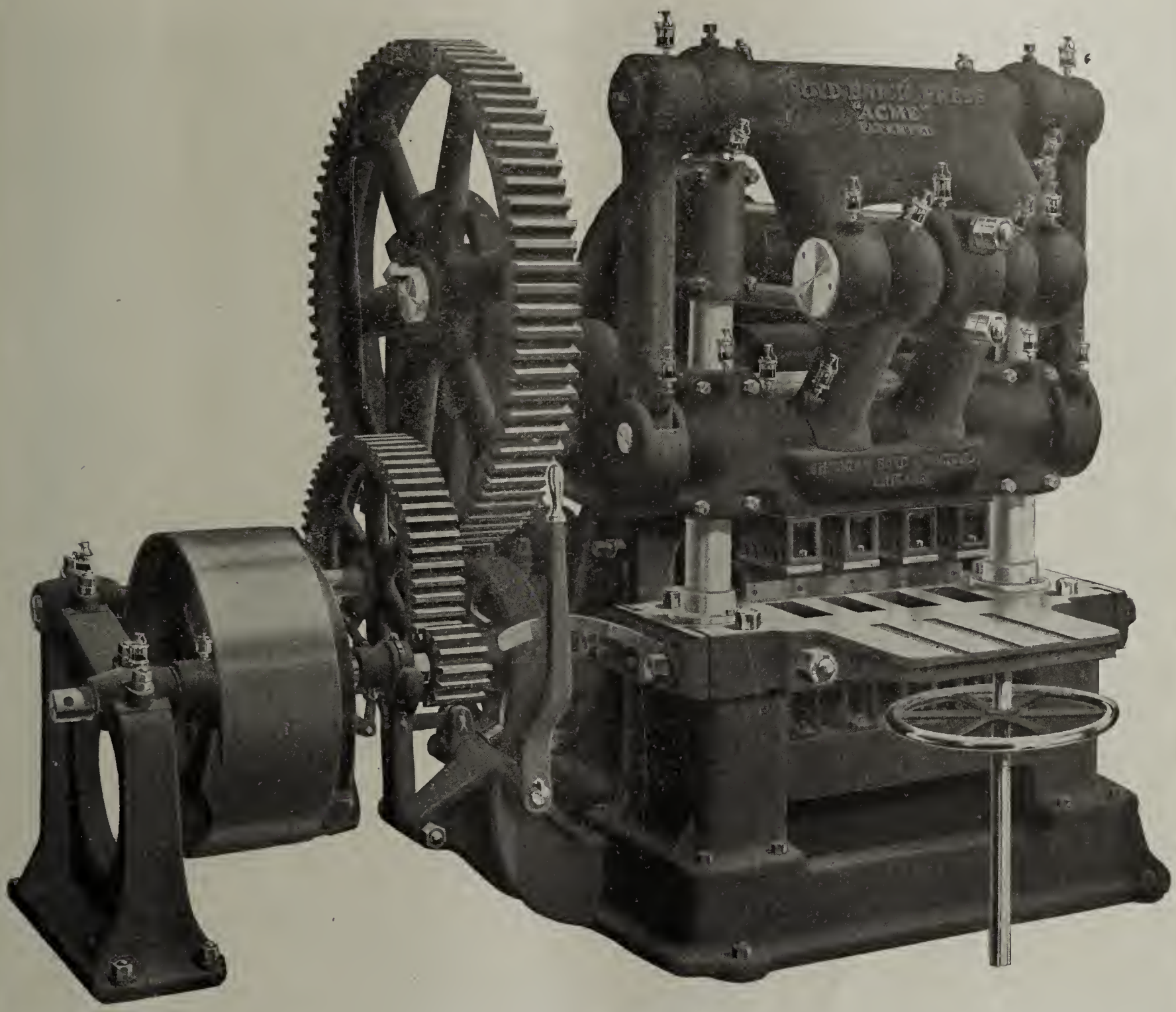
The Boyd Press has great strength and endurance, great pressure and long dwell. Boyd Presses built 20 years ago are still in use and doing good work. Brick Presses that last are the cheapest in the end.

Chisholm, Boyd & White Company

Office and Works: 57th and Wallace Streets, CHICAGO, ILL.

THE BOYD BRICK PRESS

Built in Two and Four-Mold Sizes



FOUR-MOLD "ACME"

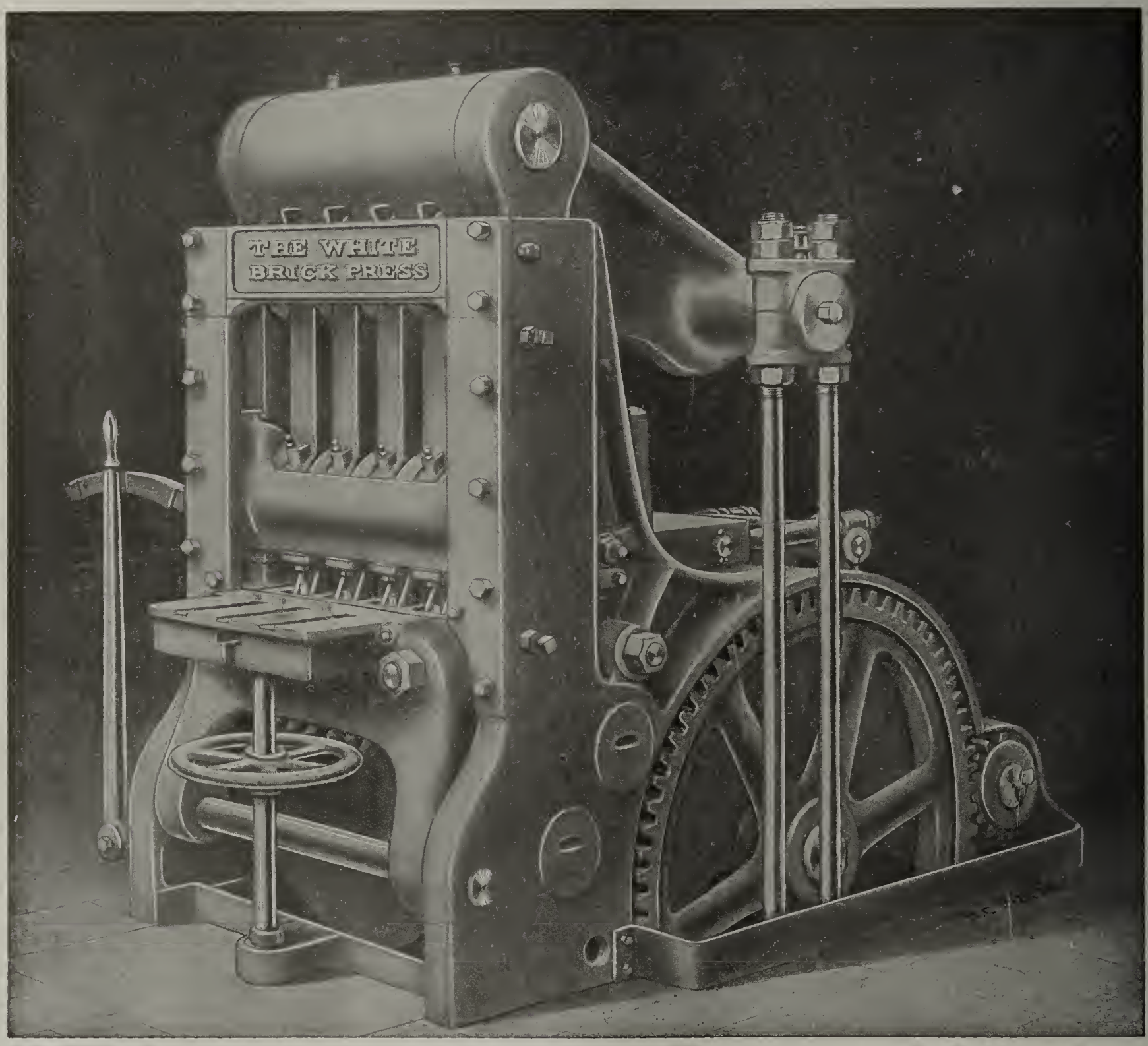
Detailed perfection, strength, endurance and quality of product have made the Boyd, the Brick Press by which all others are judged.

Write for catalogue No. 20 containing suggestions concerning the equipment of brick plants with complete plans.

CHISHOLM, BOYD & WHITE CO.

Office and Works: 57th and WALLACE STREETS CHICAGO, ILLINOIS

ALWAYS ON THE JOB
THE WHITE BRICK PRESS



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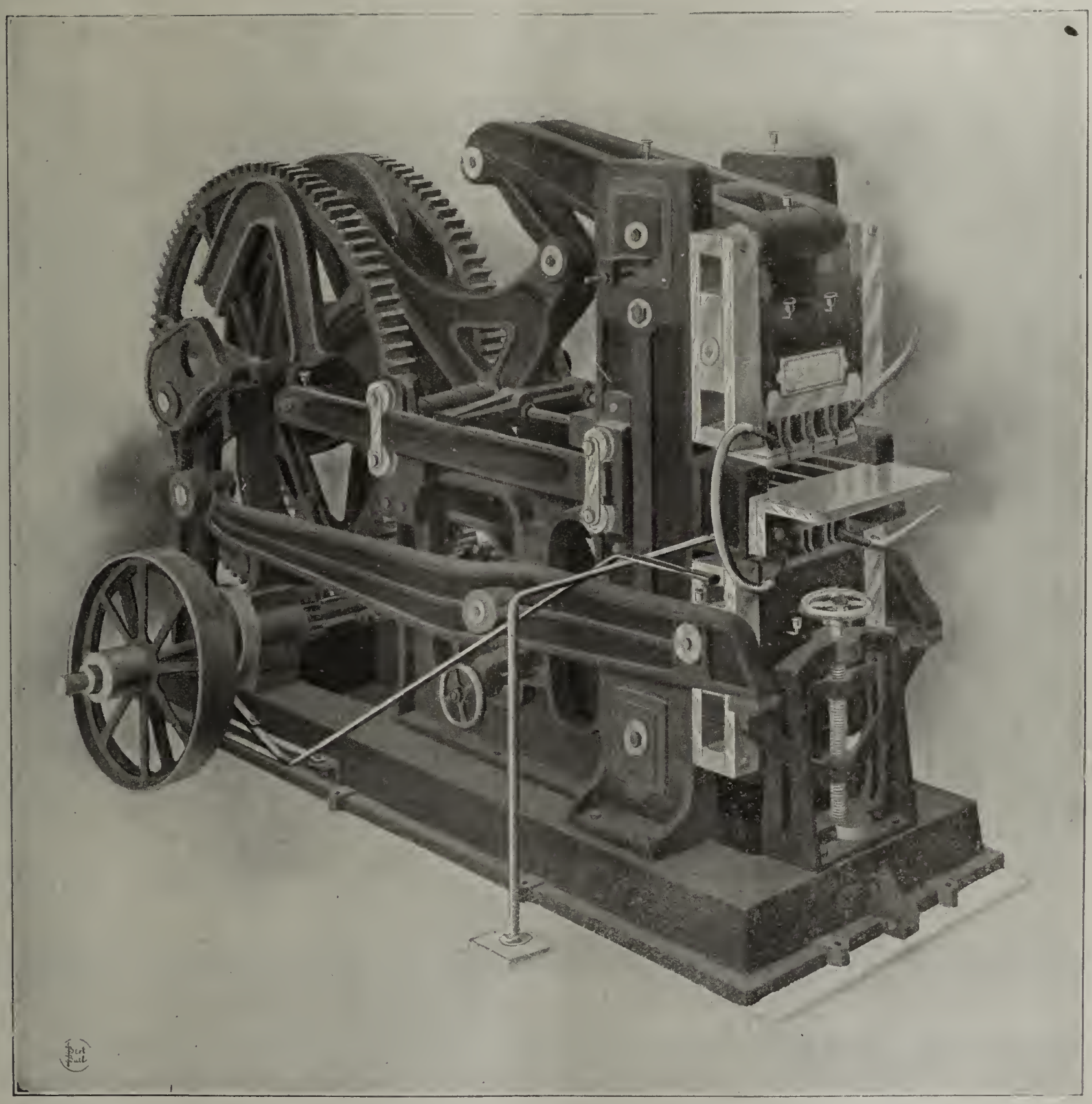
Weighs SIXTEEN Tons, Built for Heavy Work



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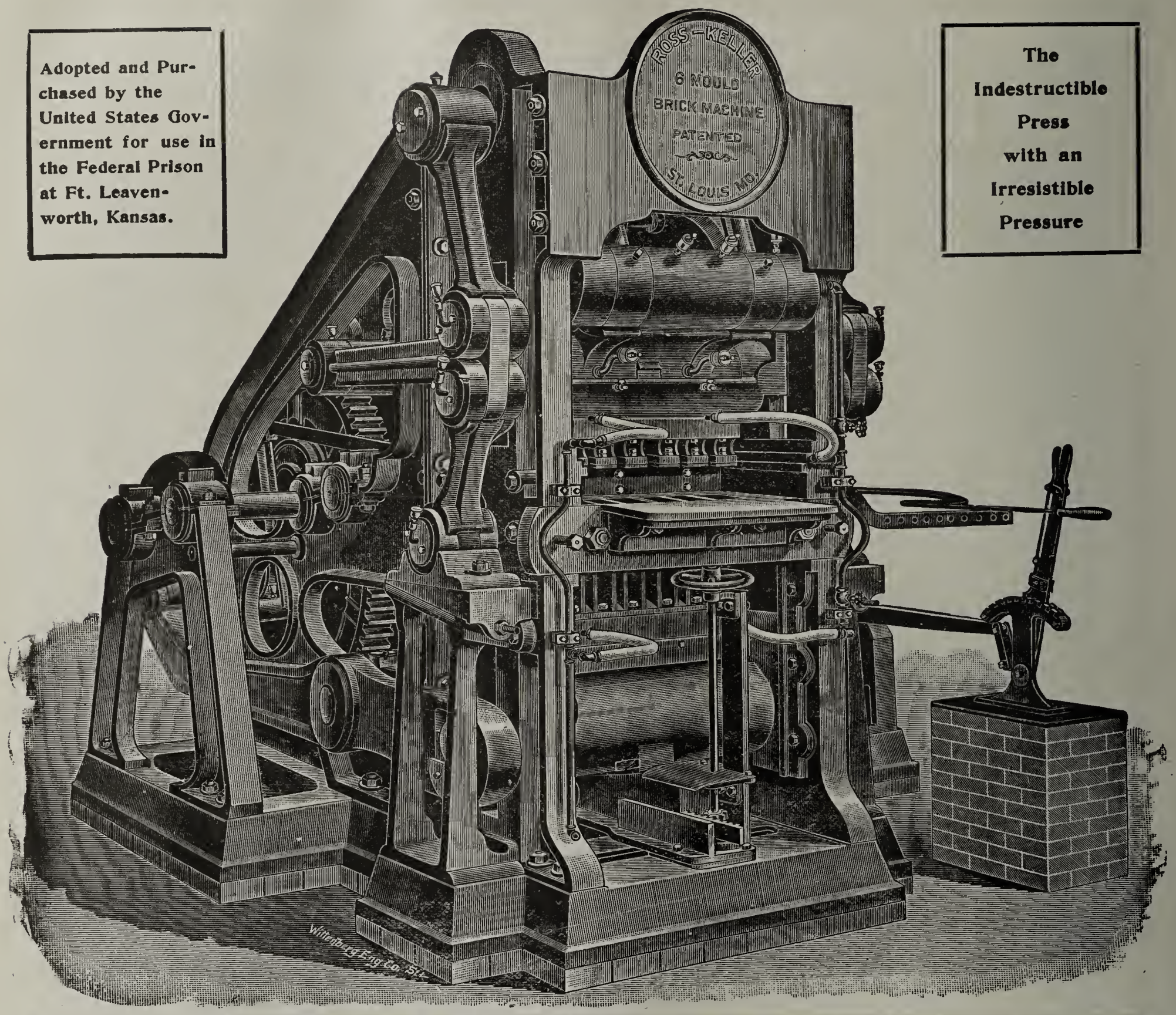

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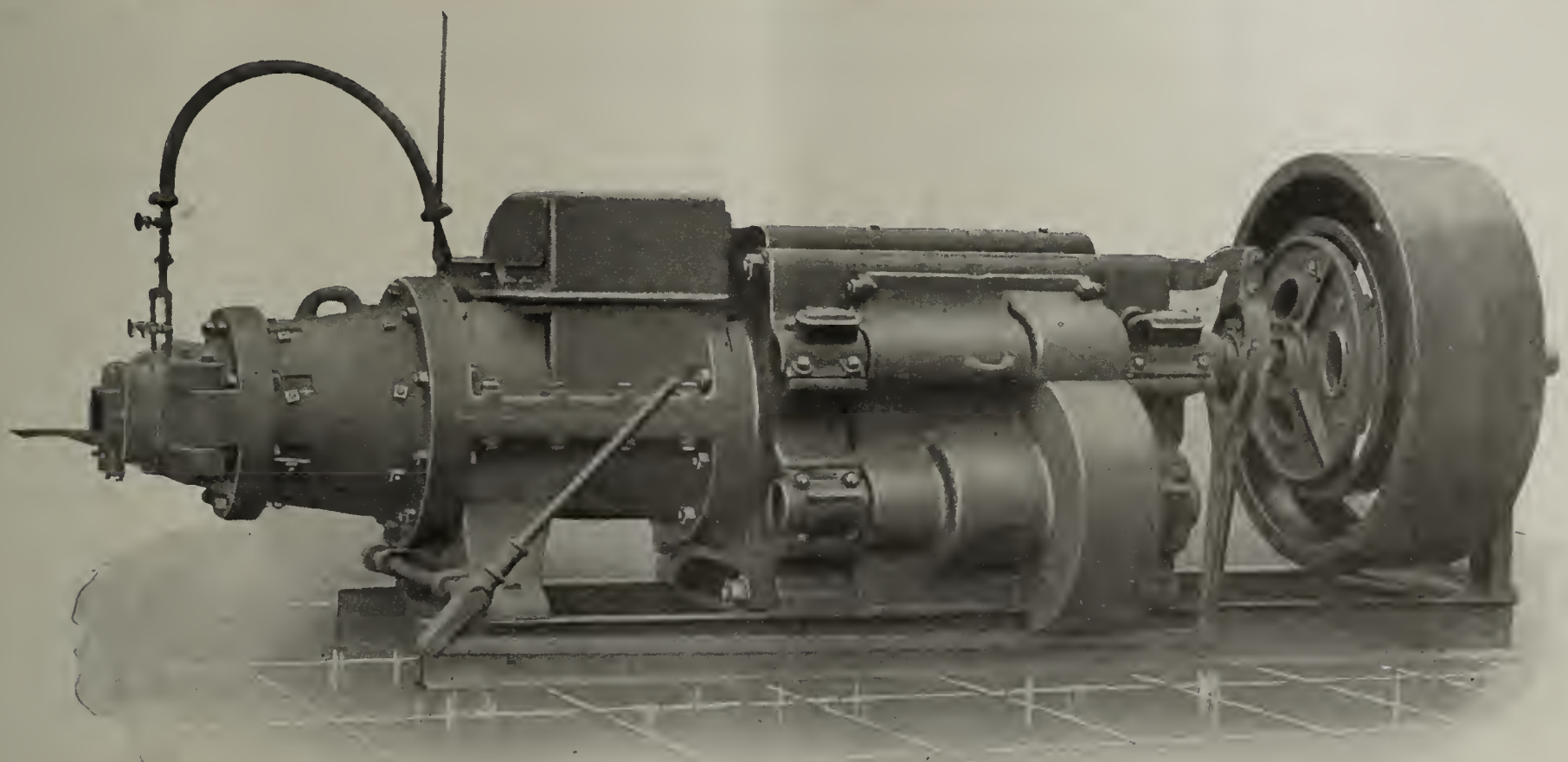

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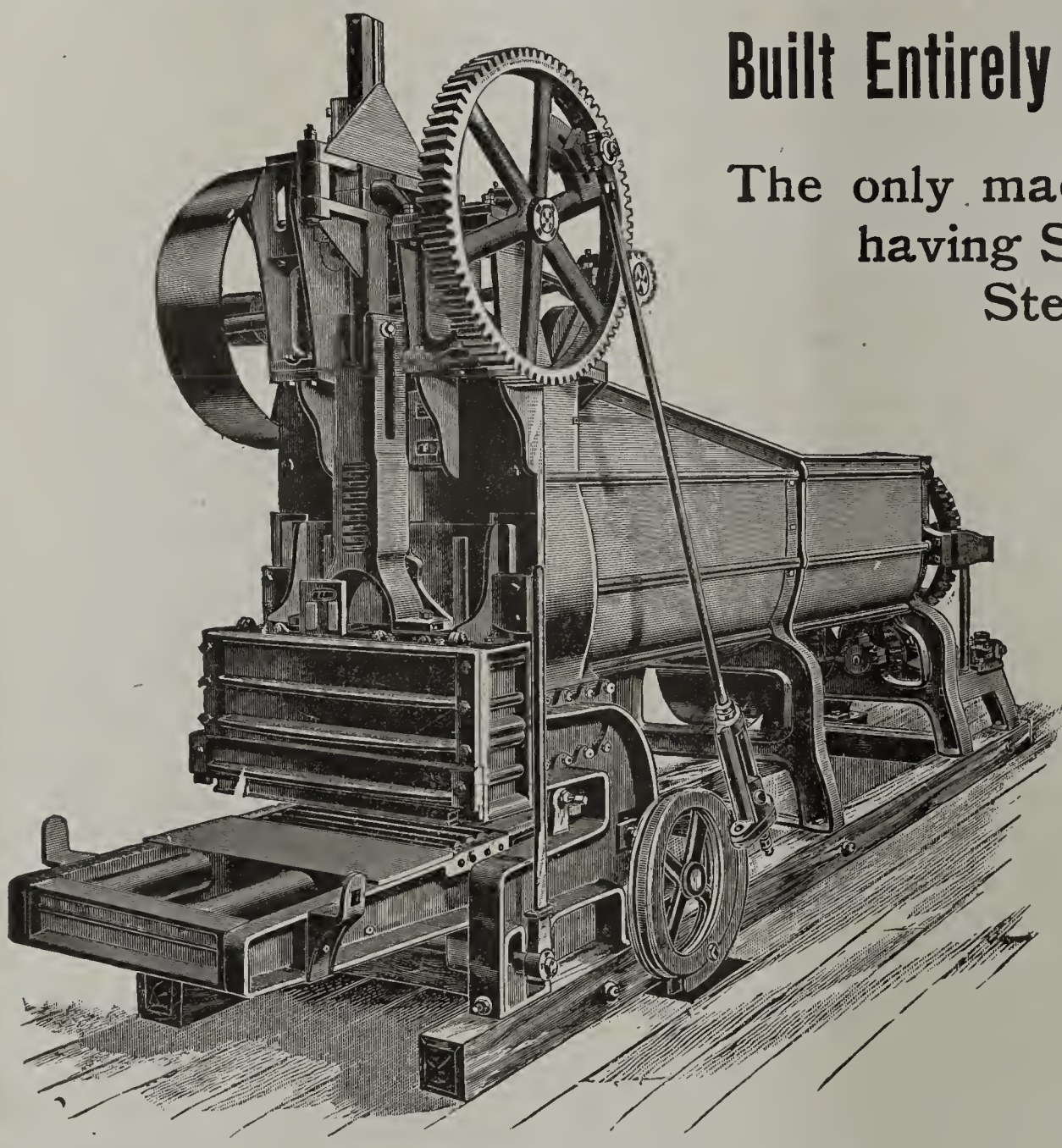

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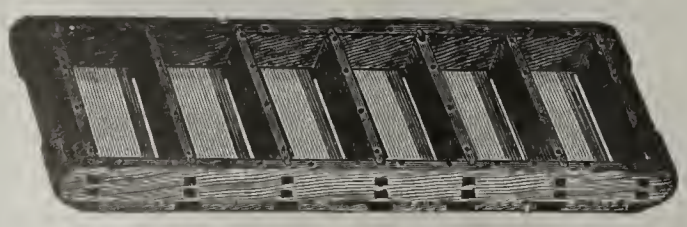

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As Manufactured by Potts

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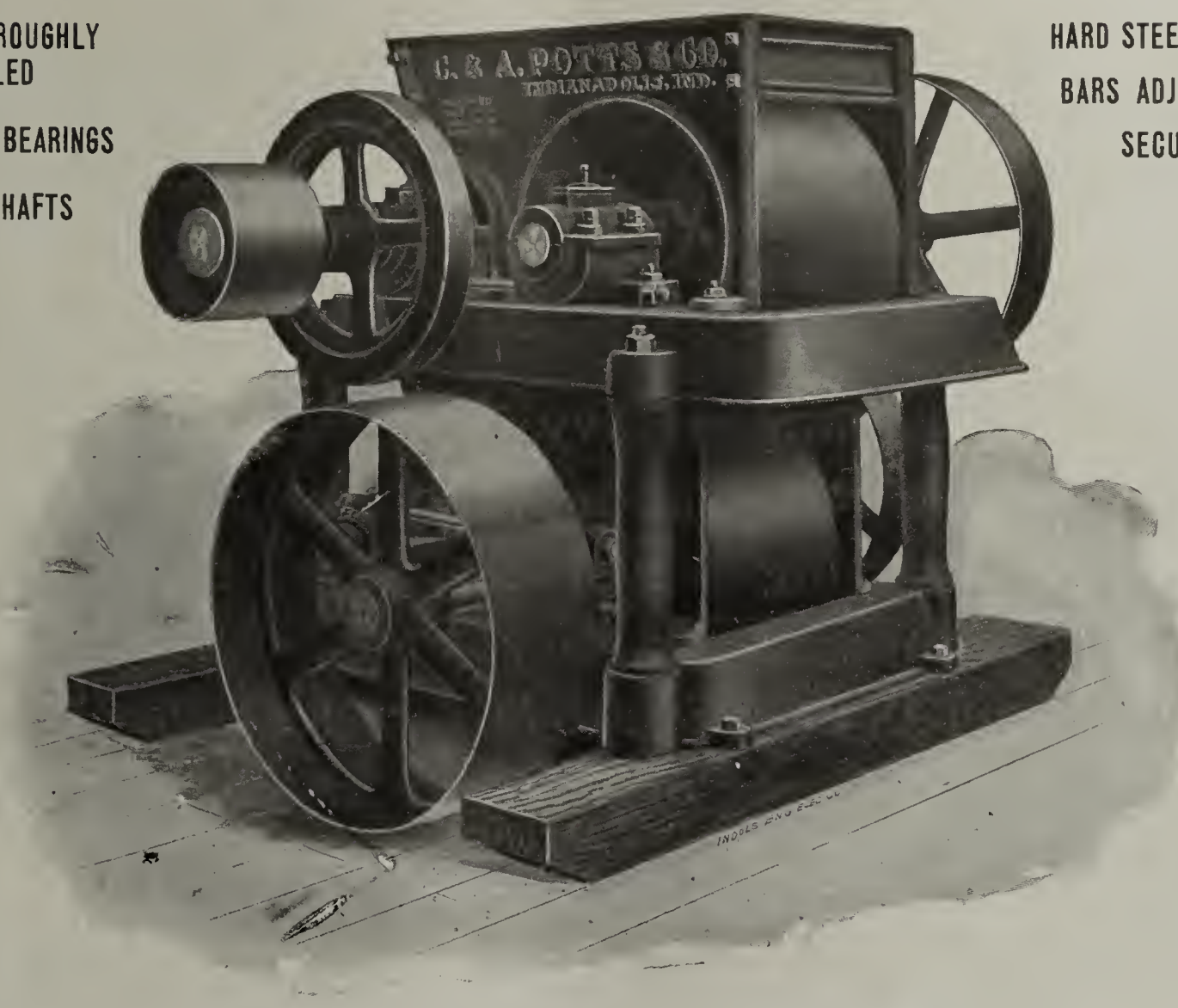

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Will not choke or clog from hard, dry or wet, sticky clays.
The MOST GENERALLY USED Machine on the market.

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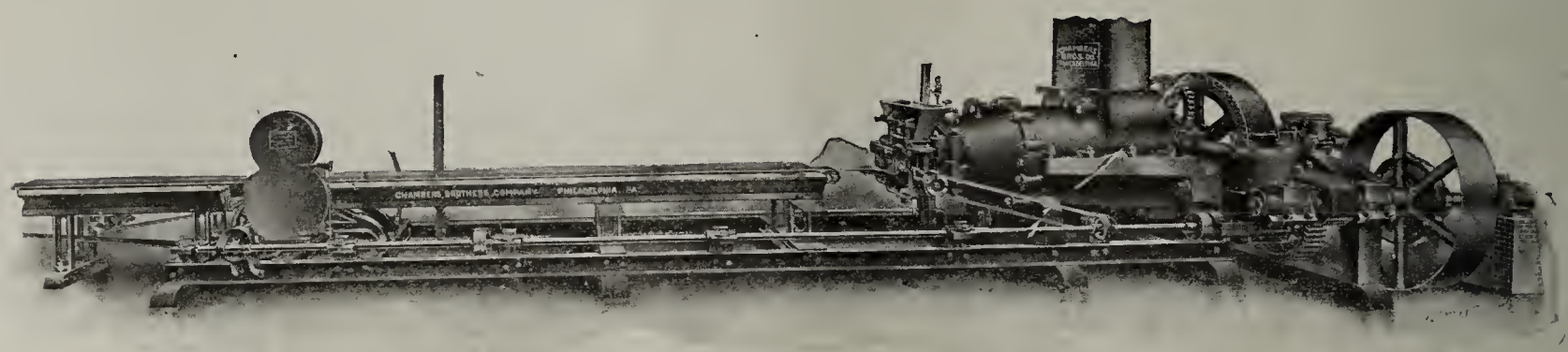

Strong, Heavy Machines with Steel Pinions and Shafts; Stone Extracting Crushers, Five Sizes Disintegrators; Dry Pans; Single and Double Shaft Mixers and Pug Mills; New Pattern Clay Elevators.

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For Grinding Tough Clays in which Small Stones may be Imbedded

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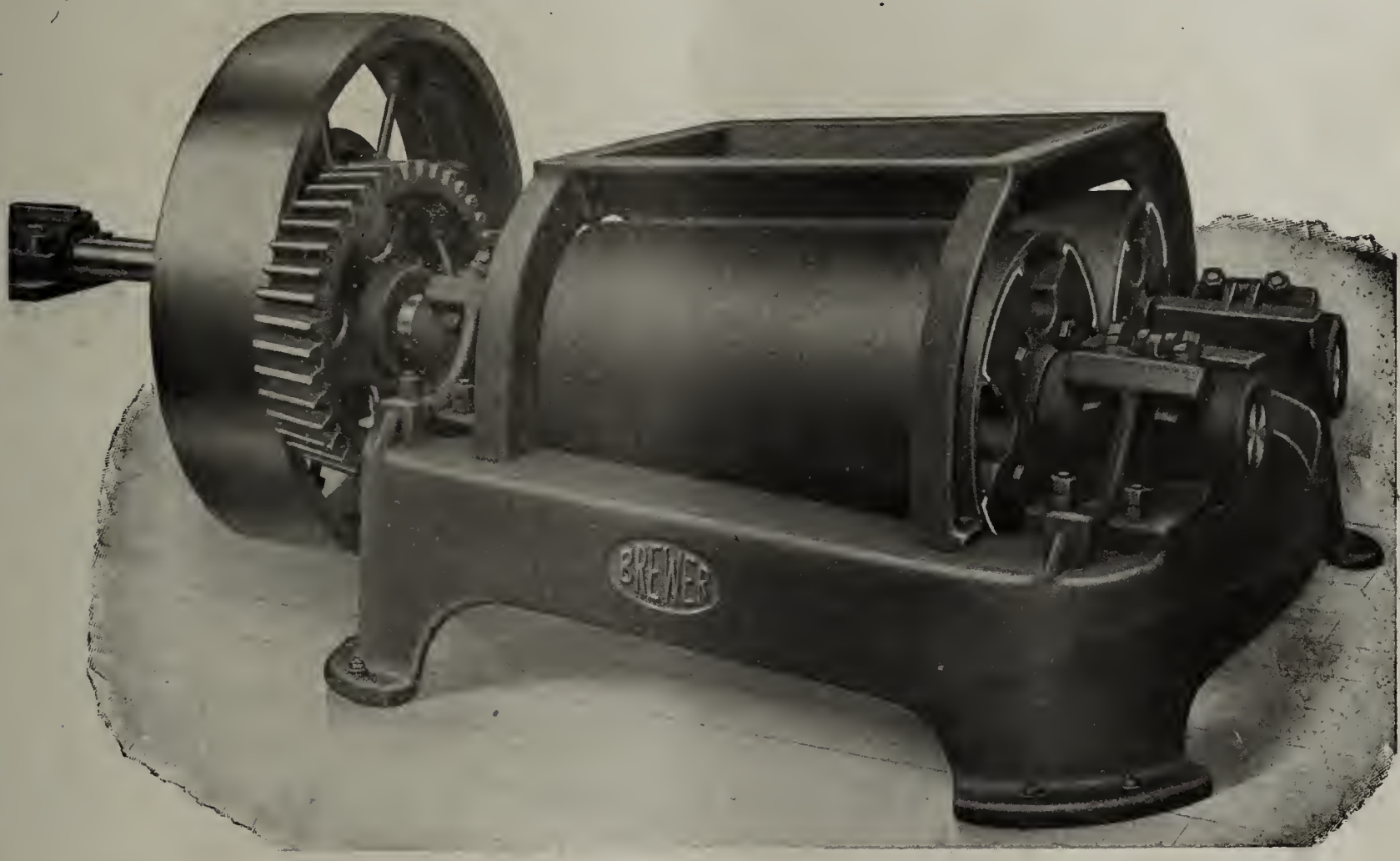
Brewer Crushers are built in a great variety of kinds and sizes. There are Conical Roll Crushers, Straight Roll Crushers, Beaded Roll Crushers, Disintegrators, Compound Disintegrator Crushers and Dry Pans. All in two or more sizes and high-grade construction.

Do you know about Brewer Crusher Rolls with removable white-iron shells? Our catalog describes them.



The Specifications Tell the Story

Here is a Conical Roll Crusher, the No. 21. It weighs 6000 pounds. The rolls are 32 inches long, tapering from 22 to 18 in. diameter, and have removable white-iron shells. The gears are 5½ in. face. The journals are 12 in. long. The shafts are 4 in. diameter. No springs behind the rolls but the crushing stress is taken by draw rods which will yield before the safety of other parts is jeopardized.

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Our catalog explains all about them and gives detailed specifications

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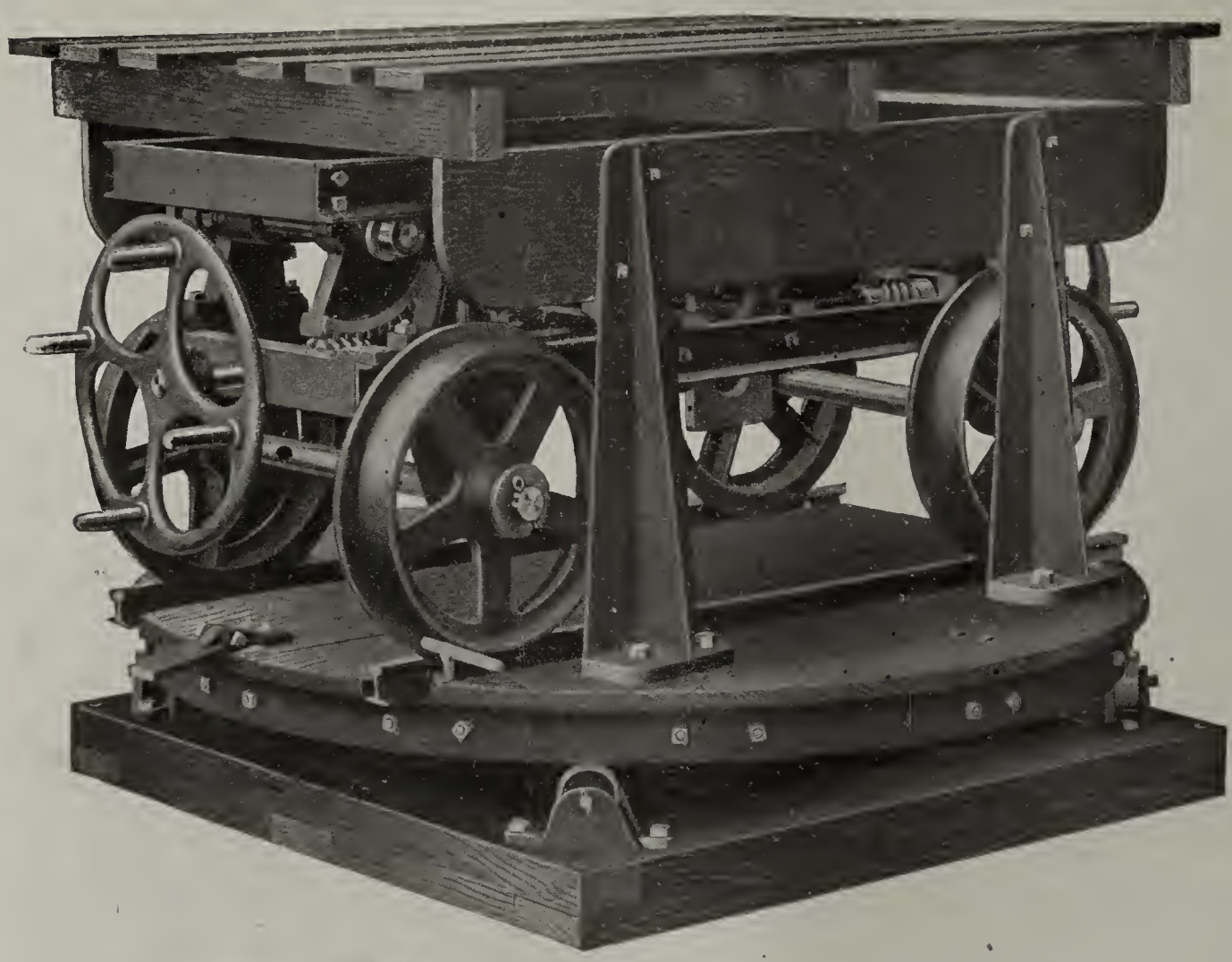
THE GUILDER ELEVATING AND LOWERING BRICK CAR

And Turn Table Used with Same

The most perfect car of the kind made. Easy to handle. Operated from either end. All iron and steel. Raised and lowered by Worm Gear and Segment.



No Charge for plans or for the right to use this system.

Pay only for what you get and nothing for a piece of "Blue Sky."

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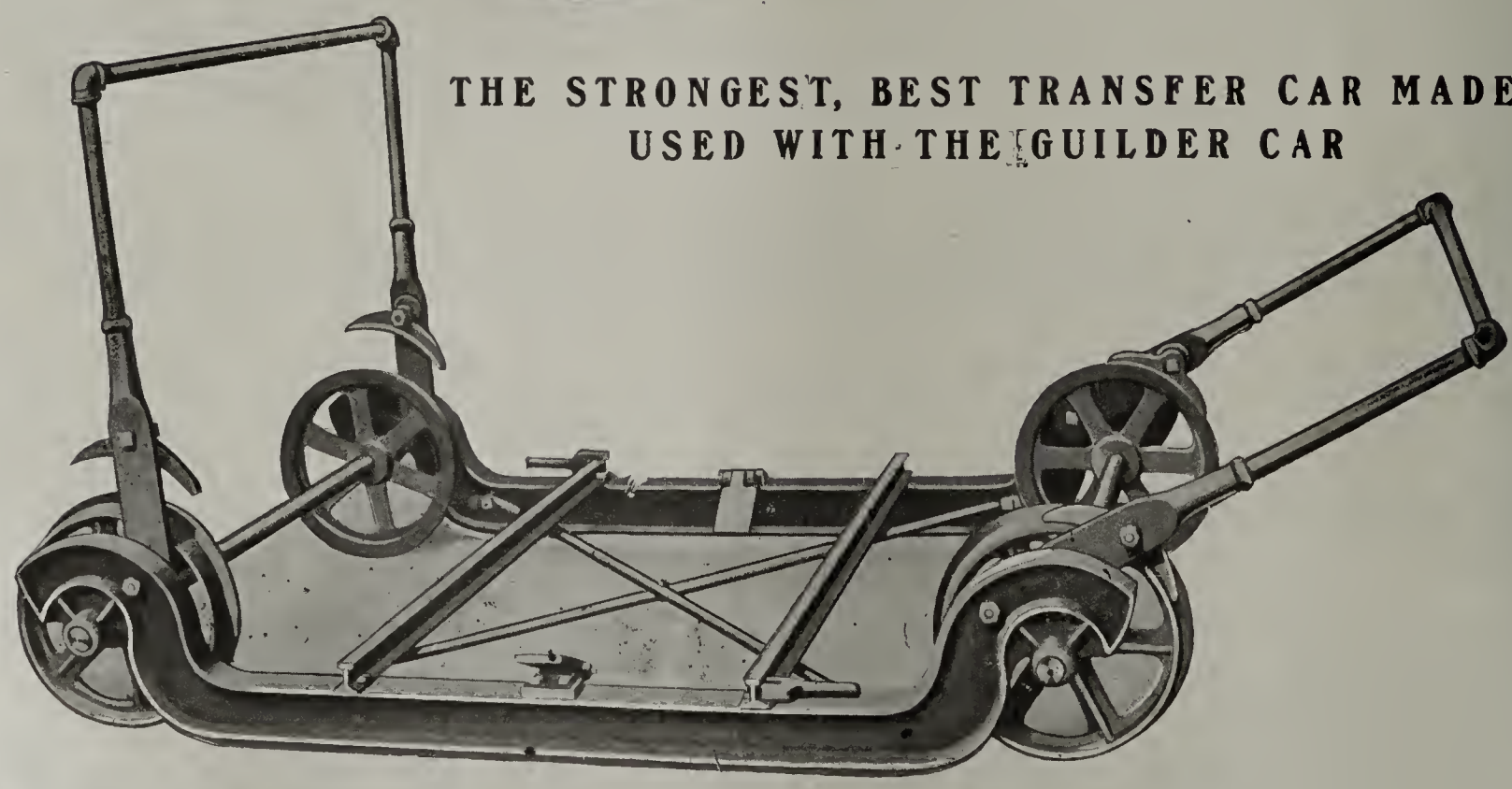

Write to the J. D. FATE CO., Plymouth, Ohio, about this system

CLAY RECORD

Entered as Second-Class Matter January 25, 1893, at the Post Office at Chicago Ill., under Act of March 3, 1879

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FIRE INSURARNCE ON BRICK YARDS*

By N. L. Meir, La Crosse, Wis.

The subject of fire insurance is a "burning question" and it is one as to its cost and reliability that I think is of interest to every manufacturer of clay products, but as to those who are so fortunate as to have fireproof plants, in which there is nothing to burn, who do not need it, but the problem of getting good insurance at reasonable rates appeals to most of us.

The difficulty of obtaining insurance on brick yards in the country at reasonable rates is partly due to the high risks which the insurance companies are responsible for.

As brick yards are mostly constructed of combustible material, in fact in some localities no insurance can be obtained, especially where the plant has no fire protection of any kind, and the buildings being poorly constructed and are too close together.

And if there should be a company that would take a risk of that kind they would insure for about 15 per cent. the value of the property and guarantee a good high rate.

In order to reduce the high insurance rates on clay product manufacturing plants, and make it less difficult to obtain insurance on them, they should use more fireproof material in their construction, and every plant insured or not insured should have some sort of fire protection, such as force pumps, hydrants, fire extinguishers, or barrels of water with pails located at convenient places about the yard. Brickyards being built nowadays should avoid the use of combustible material as much as possible, especially in places where fireproof material can be used, or if possible build entirely fireproof, that is, if the clay deposit is sufficient to warrant the construction of a permanent plant, as the insurance rates for such plants are so much lower than those asked for the old-fashioned plants that the investment proves profitable from any point of view.

It is the general estimate of builders that the cost of building in a way to make a factory or plant practically safe against fire is only 15 per cent. more than for the ordinary method which requires heavy insurance rates.

Fire insurance companies are encouraging the building of fireproof manufacturing plants through the reduction in rates, and the plant which is practically safe from great damages by fires enjoys such reductions, the insurance to protect such property is relatively small, and in case of fire the damage is chiefly local and is limited in most cases to the destruction of combustible material.

Under existing conditions of manufacturing, the work of building new plants in the old way is not only extravagant and uneconomical but almost criminal in purpose. Cheap construction may be justifiable where a temporary plant is being built, and the supply of clay is limited and conditions do not warrant permanent and expensive construction. In case of fire in a plant of wooden construction and when everything is dry, it would not take very long before the whole plant would be destroyed, the loss in buildings and machinery may not be so great as the loss in business and the canceling of contracts if there are any, and the amount of insurance usually carried by such plants can not compensate for the cancelling of large contracts and the fulfillment of orders from old and new customers.

In going into the matter of insurance on brick yards with about twenty different fire insurance companies, I found that every one of them had brick yards on the list of prohibited risks, but there are many more on that same list, so we are not the only ones on the list of "bad actors."

Risks on the prohibited list of the companies are as follows: Planing mills, flour mills, saw and shingle mills, grain elevators, broom and brush factories, brick or tile factories, ice houses and tobacco sheds.

And there are a great many more too numerous to mention. But insurance companies some times accept prohibited risks when the moral and physical hazard is A 1.

Rates on a few of the different risks are as follows:

Retail lumber yards	$1.70	per	$100.00
Flour mills	2.00	per	100.00
Grain elevators	3.25	per	100.00
Ice houses	4.00	per	100.00
Planing mills	4.25	per	100.00

These risks are carrying from 60, 70 to 80 per cent. In sending out a few inquiries to brick yards in different localities in order to find out what rate of insurance they are paying, I notice that every one was paying a different rate. The rates paid by them are from $3.00 to $3.25 and $3.55 per $100.00.

I presume the variation of rates in the different localities is due to the location and the way the plants are constructed, and I think that brick yards located out of the city limits are paying a higher rate.

As insurance companies say risks out of reach of fire departments and city water are usually given a higher rate.

A GENERAL DISCUSSION ON FIRE INSURANCE*

President Kennedy: This paper is now open for discussion. I would like you gentlemen to ask questions freely and we will do our best to answer them.

*Read at the 1909 Meeting of the Wisconsin Clay Manufacturers Association.

Secretary Wilson: How many members are there present here who carry insurance on their brick yards? and what are the rates which you are obliged to pay?

In response to this question eight men rose who stated that their premiums ranged from $3.00 to $1.75 respectively.

Secretary Wilson: I will say that I have been more or less interested in this subject for some time and it has occurred to me to ask whether it would not be advisable to at least investigate the feasibility of organizing a Mutual Insurance Company of our own. The Retail Lumber Dealers' Association of Wisconsin have a similar association in connection with their organization. They insure lumber yards for their members up to a certain limit, which I believe is $3,000. Their insurance department has been in existence for quite a number of years and I understand is a complete success. I have gone into this question somewhat with the secretary of the Retail Lumber Dealers' Mutual Fire Association in an endeavor to obtain some definite information on the subject. My inquiries have not developed into anything beyond the fact that I feel convinced it would be well for us to investigate the matter thoroughly. There are a great many details to be taken into consideration on a proposition of this kind. In the first place, I understand that the law requires a subscription or obligation for at least fifty thousand dollars of insurance before we could receive the sanction of the insurance commissioner of the state to do business. We would also need to gather some statistics and take into consideration the losses which have occurred during the past few years. I merely speak of this subject at this time because I have discussed it with various members and it appears to me that it is a matter which deserves consideration.

Mr. F. L. Sanborn, Portage: It seems to me that it would be well to appoint a committee whose duty it shall be to investigate this matter and report at our next meeting. They could make thorough inquiries and then report whether they would recommend the formation of a mutual fire insurance company or not.

Mr. L. T. Crabtree: I have been somewhat interested in this subject and have been investigating it privately for some time. I did not feel fully prepared to bring up the matter now, but since it has come up for discussion, I believe it will lead to good results if we should consider it. I propose to seek the sentiment of this gathering and would suggest that a committee of three be appointed by the chair, with instructions to report at some time during this convention, in order that we may decide whether some action cannot be taken towards organizing a mutual company. I would like to know how much insurance can be obtained among our members in order to hold the required fifty thousand dollars of actual insurance in order to enable us to organize a company. When this is secured we can get a charter from the secretary of state and are then permitted to organize a mutual insurance company. The routine work is not very difficult, and it does not require any great amount of clerical work. I know of a number of brickmakers who do not carry any insurance on their plants because the rates which have been quoted them by the insurance companies are practically prohibitive. My knowledge of brickyards leads me to the belief that a fire occurs but very seldom and the risk consequently would not be very great.

I therefore make a motion that the chair be authorized to appoint a committee with instructions to investigate this matter and report back some time during this convention, on the feasibility of organizing a mutual insurance company.

Major J. W. Hinkley: In seconding this motion I wish to say that I am in thorough sympathy with it. I do not carry any insurance at present, because I cannot afford it at the rates which were quoted to me. The rate on our plant for about six or eight years was at 2 per cent, and shortly thereafter it was raised, and now they desire to again raise the rate to 3 per cent. You cannot get any fire insurance at a reasonable rate except with some wildcat company, which is also extremely unsatisfactory, and we therefore decided to drop the insurance and carry that item ourselves. I do not care to do that, however, if we could have a mutual company organized in the state, and I am sure we could carry the insurance at a much less cost to ourselves than is demanded by the insurance agents.

Upon being put to a vote, the motion was unanimously carried.

The chair thereupon appointed Messrs. L. T. Crabtree, Major J. W. Hinckley and N. L. Meir as members of that committee.

Mr. C. W. Lansing: I wish to suggest that the committee investigate the system adopted by another national association. They have a system of assessment for losses. I believe their initial cost is about $3.00, and when a fire loss occurs that loss is divided up by assessment, and I am informed the figures show that the system has been very successful, and that notwithstanding the fire losses that have been paid, it has reduced the cost of the insurance paid by the farmers throughout the country. I think it would be worth looking into.

Mr. F. L. Sanborn: I will say that we have a mutual company in Portage which I have been interested in for several years. We charge half rates, and I know that at times we have had a dividend coming back to us at the end of the year from money which was not expended, reducing our rate still further, so that during the last ten years I think our experience has been that the insurance has cost us about half rate.

Major Hinkley: In our motion we have not mentioned at all other manufacturers' plants. I presume that it was intended that we should have all the members of our association in this. I have been living in Green Bay for a long time, and am interested in the brick business. There are six or eight different brick plants in operation in Brown county, and if any one of them has ever had $10 loss by fire I don't know of it. The idea of paying 3 per cent. on a business which has no losses whatever is preposterous.

President Kennedy: We have not been quite so fortunate; we have had two or three fires at our place.

BRICK COMPANY FILES PETITION IN BANKRUPTCY

A petition in involuntary bankruptcy was filed against the Morrison-Trammel Brick company, Rome, Ga. Attorney M. B. Eubanks, representing the petitioning creditors went to Atlanta and Judge William T. Newman of the Federal court referred the matter to W. S. Rowell, referee in bankruptcy, at Rome. The papers in the matter were filed October 1st with Deputy Clerk John C. Printup.

The creditors represented by Mr. Eubanks are E. E. Holder and Co. of Rome, the Atlantic Refining Co. and the Davis-Price Foundry Co. The petition cites among the assets of the company plant and material valued at $15,000; pipe on hand, $2,000, and personal property, $1,000. It is believed that the assets of the company are about $30,000 and the liabilities in the neighborhood of $40,000.

The Morrison-Trammel Brick Co. was organized 11 years ago. George W. Trammell is the president and J. H. Rhodes the secretary and treasurer. The company is capitalized at $40,000. It has extensive yards and a fine plant on the East Side. It has done a large business throughout the south, and has made a specialty of sewer piping.

It is hoped in local business circles that the difficulties of the company may be speedily adjusted and that it may resume its place in the industrial activities.

THE FARMER AND TILE MANUFACTURER*

By Prof. E. R. Jones, Madison, Wis.

Ever since John Johnston brought some patterns across the Atlantic from which semi-circular or horse shoe shaped tile were made, the manufacture of drain tile from burned clay has been an important factor in the development of American agriculture. This beginning was in 1838. During the following year on his farm near Geneva, N. Y., after a fashion which he had practiced in Scotland, Mr. Johnston laid the first tile ever laid in America. They were placed in a clay subsoil, at a depth of about two and one-half feet, with the concave side down, and resting on the flat earth bottom of the trench. A few years later horseshoe tile were provided with flat soles. This was a decided improvement, as it did away with the erosion of the open earth bottom. Then, too, the smooth tile bottom offered less resistance to flow, and the carrying capacity of the tile was increased.

The year 1858 marks the introduction of the cylindrical tile. The step gave the manufacture of drain tile a lasting impetus and tile drains became very common in New York. Some of the tile laid in these early days are still operating.

It might be interesting to note some of the early trade notes relating to the tilemaking industry:

In the country Gentleman of May 31, 1855, the following advertisement appeared:

"Appleton and Alderson Drain Tile Works of Albany will sell drain tile at the following prices:

Horseshoe Tile.

4½ inch caliber	$18 per M.
3½ inch caliber	15 per M.
2½ inch caliber	12 per M.

Sole Tile.

4 inch caliber	$20 per M.
3 inch caliber	18 per M.
2 inch caliber	12 per M.

The subscribers have enlarged their works and are better prepared than ever to furnish tile of the above patterns and prices. Also large tile for small streams. We warrant our tile to be perfectly sound and to fit tightly at the joints, so as to admit water and keep out the dirt. The tile have a larger caliber than any others of American manufacture for the same price. They are more than 14 inches long—1,000 pieces will lay 72 rods. Full directions for tiling will be sent to all who address the subscribers. We need only to say that the Appleton and Alderson obtained first prize at the Albany county and New York state fairs. Practical drainers furnished if required."

"Country Gentleman, May 31, 1855."

During the 70's and 80's Illinois began to lay tile, Iowa was soon to follow. Today there is scarcely a square mile of arable land in the state of Illinois that does not contain one or more lines of tile. Travel through Iowa by train and you see in every town carload after carload of drain tile in the yards, like lumber piles in Wisconsin. Our state, too, has laid tile, but as yet we are not in a class in this respect with our sister state to the south or the one to the southwest. However, Wisconsin has vast areas that await the coming of the drain tile. It is for this reason that the Department of Soils of the Wisconsin Experiment Station has interested itself in the matter.

The following summary of drainage conditions in Wisconsin is reported in Bulletin No. 146:

Under present conditions, then, we conclude that:

1. Reclamation by drainage will make two million acres of peat and muck lands in the central and northern part of the state fairly productive lands.

2. Drainage of the marsh lands in the southeastern part of the state will make nearly two-thirds of a million acres as valuable as any class of lands in the state.

3. The amount of clay lands needing tile drainage and the total benefits derived from such drainage are nearly twice as great as in the case of marsh lands.

4. A fair estimate of the amount of land needing drainage, of the cost and of the benefits above cost is given in the following table:

Table IX.—Acreage of poorly drained land of each type, together with cost and profit of drainage.

	Number acres.	Cost of drainage.	Profit above cost.
Peat and muck on sand and granitic area	2,000,000	$10,000,000	$ 20,000,099
Muck and peat on limestone area	610,000	18,300,000	24,000,000
Clay of last glaciation on limestone	1,500,000	11,250,000	30,000,000
Red clay of Superior and Green Bay region	1,300,000	9,750,000	13,000,000
Old glacial clay on granitic area	1,000,000	11,250,000	15,000,000
Last glacial clay on granitic area	600,000	3,600,000	6,000,000
Old glacial clay on limestone	50,000	350,000	1,000,000
Residual clay on limestone	300,000	2,250,000	5,000,000
Total	7,360,000	$66,750,000	$114,000,000

5. The writers know of no other way in which so great an increase in the productive power of the agricultural lands of Wisconsin can be effected as by drainage.

The growing demand for drain tile has brought many inquiries to the department as to where drain tile could be obtained. This led to the preparation of a list of tile manufacturers, copies of which were made and furnished to prospective purchasers of tile upon request. The general complaint that has been returned to us is that at comparatively few factories could orders be filled without from one to two months' notice. This condition of affairs is borne out by the experience of the department itself. Upon three occasions it was found necessary to purchase tile to drain experimental plots. Three-fourths of the replies received from requests for quotations were accompanied with statements that orders could not be filled for periods averaging four weeks. Two of these occasions were in June in different years and the other was in October, showing that a scarcity of tile ready for shipment is not peculiar to any particular season of the year. This apparent scarcity of tile ready-to-ship in Wisconsin factories aroused our curiosity, and circular letters were sent to all tile manufacturers whose addresses were available. The solicitated information was as follows:

1. Approximate output of drain tile from your factory between Jan. 1, 1907, and Jan. 1, 1908:
   Smaller than 6 inches .....
   6 to 12 inches, inclusive.....
   Larger than 12 inches.....
2. Is this more or less than the average output for the last five years?.....
3. How many carloads of tile have you on hand at present?.....
4. Do you expect to increase the capacity of your plant in the near future? .....
5. If so, to what extent?.....
6. There is a common complaint among the farmers that orders for tile cannot be filled at most factories for two or three months. Why is this?.....

Practically all of the answers revealed the fact that it was the increased demand for tile that caused the shortage. Replies from several factories in Illinois tended to show that while the demand was increasing, the factories were increas-

* Read at the last meeting of the Wisconsin Clay Manufacturers' Association.

ing their capacities. However, during the past season fewer complaints of scarcity of tile have come to us, so it is probable that Wisconsin manufacturers too are increasing the capacity of their plants. Quotations from Illinois factories show their prices to average about 10 per cent. less than Wisconsin prices.

It is not within the scope of this paper to make suggestions bearing directly upon the detail of the manufacture of tile. A few observations, it is hoped, will not be out of place. We have known one instance where a single car of tile has put the firm which manufactured it out of business in that locality for perhaps years to come. The offending carload of tile had been improperly handled while green, they had warped and otherwise presented a very irregular appearance. It would have been a wise move for that company to have ditched the whole carload or else to have sold it as a second or third rate article. Rainbow tile which have zagged a trifle while green, present an uneven appearance, but are not as objectionable as tile that have flattened. The rainbow tile can usually be rotated until a perfect joint is effected. In fact they are desirable in laying a curved line. The proverbial disadvantage, however, usually results and unless the tiler has been methodical in his sorting, when curved tile are sought, none but straight ones are in evidence.

Just as the grocer, to help the sale of a package of oat meal, or a can of baking powder, gives as a premium a flowered dish or some trinket, so one tile manufacturer who has come to our attention popularizes his product by throwing in with each carload a few Y's and T's, to match the size and quantity of tile in the car. No man likes to get something for nothing as well as a farmer, and the innovation has to our knowledge been the means of securing the sale of several carloads of tile.

The tendency of the time is to use larger tile for laterals than formerly. In Illinois 4-inch laterals are more common than those of three-inch. In this connection there must be recognized two distinct classes of land that need drainage: First, the wet narrow ravines where a single line of tile is sufficient, and second, the broad flat areas where a net-work of parallel laterals is necessary. It is very evident that the single tile in the ravines receiving unchecked seepage from a wide and perhaps steep area on each side, will have to be of larger diameter than if it were one of a series of laterals four rods apart and receiving the seepage from an area only two rods wide on either side. A four-inch, or perhaps a larger tile, would not be too large in the former case, but in the latter case, particularly if the subsoil is a retentive clay, it is doubtful whether a four-inch tile would be an iota better than a three-inch tile. If the subsoil is of sand a larger tile should be used.

If we may be permitted to make a plea to Wisconsin tile manufacturers in closing, it would be to see that factories be built and operated in the northern part of the state. There is a growing demand for tile in the clay region of north central and northern Wisconsin. Three cases have come to our attention where the freight charges on tile shipped to Douglas, Bayfield and Ashland counties from southern Wisconsin and northern Illinois in one case exceeded the cost of the tile at the factory and in the other two cases the freight was only a little less than the factory price. This condition of affairs is a serious handicap to the drainage in northern Wisconsin and should encourage the installation of tile factories in that portion of the state—the portion which contains the most retentive and most poorly drained of our clay soils.

The reading of this paper was listened to with apparent interest and generously applauded.

GENERAL DISCUSSION ON DRAIN TILE.

President Kennedy: Is there someone here who will open a discussion on that paper?

Secretary Wilson: I would say for the benefit of our members that our program calls for a discussion on this paper by Mr. Wm. Meadows, of Burlington. I had a letter, however, from Mr. Meadows in which he said that "he was not quite as young as he used to be," and he did not know positively whether he would be able to be with us. I am sorry to note his absence, but I trust that someone who is familiar with the proposition, especially our tile manufacturers, will open the discussion on this subject.

Mr. J. M. Powell, Brooklyn, Ind.: I think the paper is a very excellent one and one that is very suggestive. It has come at a time when it will arouse probably the greatest amount of interest. I do not know the condition of drainage in this state, but I do know that in our own state, Indiana, and Illinois, we were about where you seem to be at this time some ten or fifteen years ago. At that time there were very few tile made compared to what are made now. The largest size made up to a few years ago was 15 inches, and today eight-tenths of the product is going out in larger sizes, and there is a great army of small factories that put up smaller sizes. Fifteen years ago the farmers were draining their land by large open ditches all over the state of Indiana. Now these ditches are being filled up after large tile have been put into them, the sizes of which range anywhere from 12 to 30 inches, and the work is being done successfully.

They take the water underground and do away with the water running over through the drain. In that way they dispose of the great number of annoyances incident to open drains. There is no investment which a farmer can make on his land which will last so long and will pay so well as to put in drain tile. If you cultivate this business in this state and educate the farmer up to it, you will find that your interests will grow in the manufacture of tile as time goes on. It seems to me that Wisconsin is about where Indiana was fifteen or twenty years ago, judging from the tone of the paper that we have just heard read. (Applause.)

Mr. J. D. Pratt, Menomonie, Wis.: The great trouble with most of the tilemakers in this country is a good deal like that which the old temperance lecturers used to have. They have to have a practical example along with them to convince the farmers that it is right. A good many years ago, down in Ohio, there was a man in the tile business who had tried for a long time, unsuccessfully to induce the farmers in that country to drain their marshy land with tile. Across the road from his plant was a wealthy old farmer whose residence was built on a little knoll and below his residence was a swamp which was being drained by an open ditch. He finally went to this old man one day and told him, "if you will permit me, I will underdrain that ten acres and I will dig the ditches and put in the tile and if it is not the best piece of land that you have got inside of two years you do not need to pay me a cent for it." The first year he went all over the ground and he cut right across it and put his tile down 40 feet in the ground. The result was that they raised an excellent crop during the next year and during the second year the crops from this land were two-thirds better than that raised on any other land which this man owned. When the wealthy old farmer saw that, he came to the tilemaker and he told him to drain his whole farm. That opened up the tile business in that territory, and the manufacturer made more money out of the tile than he did out of the brick business. Today that whole country is underdrained, and that is why I say it takes a practical example to convince the majority of people. (Applause.)

Prof. Weidman: I wish to get the names of all those who are making tile for the benefit of the authorities at Madison, because we want to publish such a list for the benefit of the farmers. The farmers are beginning to appreciate the matter of drain tile, but the manufacturers are lagging behind in putting their goods upon the market.

Mr. J. D. Pratt: Down in our part of the country there is a settlement of Indiana farmers and they came to me and said that they would underdrain their farms if they could get the tile as reasonably as they could buy them in Indiana. They all know what under drainage is. There are also some Germans there from the Old Country, and they know what under drainage is. They lease the land in the Old Country for five years and then underdrain that land at their own expense and by that method are able to get that much more crop out of the land than it would pay if it was not underdrained. It certainly must be a paying investment, for they are careful and thrifty people and do not waste their money.

THURBER BRICK COMPANY ONLY UNION BRICK YARD IN SOUTHWEST, WHICH WORKS HARDSHIPS ON THE PLANT

Mr. Lee McGraw returned to Thurber from Chicago, where he attended the national convention of the International Brick, Tile and Terra Cotta Workers Alliance, as the representative from Local Union No. 153 of this city. Mr. McGrew had the distinction of being the only representative from a union in the southwest, no other representative being in attendance from Texas, Oklahoma, Arkansas or New Mexico. In view of this fact, Mr. McGrew introduced, and had passed by majority of only one vote a resolution which provides for an organization fund. This fund will be used for defraying expenses of organizers, who will be sent to every city where large brick plants are in operation.

It is to be hoped that sucecssful organizers will be sent into Texas, in which large state, with at least a dozen large plants, the Thurber plant is the only one which employs union labor exclusively. And it might not be amiss to here state that the Thurber plant is the only one in the state which is not paying a dividend. In fact it is stated on good authority that the Thurber plant has been operated at a loss ever since union labor was fully recognized and the present wage scale signed. The reason for this is apparent. The Thurber plant pays the union wage scale, working union hours. The scale, naturally, is higher and the hours shorter than at any other plant in the state. Hence other plants employ non union labor at the lowest possible wages, and work the opentines long hours, can turn out more brick for less money than the Thurber plant. This works a hardship both on the company and the employes, and for this reason the officers and members of the local union are strongly in favor of organization at all other plants in this and adjoining states. And why not? Unionism, as carried out by the organization of this place tends to elevate the citizen in every way, putting him in a better condition morally, socially and financially. Organization brings about a greater spirit of fellowship, both between the members and employers and employees.

The time is not far distant when every mine (both of the bituminous and lignite fields) and brick plant in the state and the southwest must recognize the union. Otherwise the few which have already done so will be compelled, under the impending strain, abandon the work or the union, which in either event would perhaps mean both.—Thurber, Texas, Journal.

BRICKLAYERS BY UNANIMOUS VOTE FIX PENALTY AT FIVE DOLLARS FOR RIDING ON CARS

The Bricklayers' union at Omaha, Nebr., at a meeting decided by unanimous vote that any member or apprentice caught riding on the street cars during the pending strike be fined $5 and that the proceeds of all such fines be given to the striking street car men.

The union also voted to extend its support in all ways to the striking car men.

THE HORSEHEADS BRICK WORKS DESTROYED BY FIRE

The splendid plant of the Horseheads Brick company, located at Horseheads, N. Y., was almost totally destroyed by fire, which broke out at 11 o'clock at night October 3rd. Owing to the size of the plant, which occupies acres of ground in the northwestern part of the village, the blaze had gained great headway before discovered. It is stated that the loss will total $100,000, covered by insurance to the extent of $25,000. The fire was one of the biggest and most disastrous that has visited Horseheads in years.

The conflagration bore all of the marks of an incendiary origin, as a substance was discovered in the immediate vicinity which resembled oil or some other inflammable material.

The fire followed a terrific explosion, which occurred in the sheds to the west of the big kiln. Two men were at work in the kiln and these, together with the night fireman, George Wilsey, were the only men in the plant. While the men were at work in the kiln they were suddenly warned of danger by a terrific explosion, which shook everything in the vicinity. Mr. Wilsey was immediately on the scene and found that part of the building in which the explosion had occurred a mass of flames. He immediately rushed to the big whistle in the engine room and its piercing shrieks aroused the people of Horseheads. The Acme and Pioneer Hose companies were almost immediately on the scene, but the fire had gained such headway that it was almost an impossibility to stop its progress.

The buildings were of wooden construction and made excellent fuel for the flames, which spread to all parts of the plant, consuming everything that came within their path. Not until 2 o'clock was the immense conflagration under control, and only then after it had destroyed practically the entire plant. No other buildings were in the path of the fire and consequently the only damage resulted to the brick plant. The handsome Eisenhart residence, which is located close by, was not touched by the flames.

Richard G. Eisenhart, treasurer and general manager of the plant, and an ex-president of the U. B. M. A., stated that he positively believes that the plant was maliciously set on fire. Signs of oil or some like substance in the vicinity of where the explosion occurred would bear out this theory. He stated that he knew of no one who would have any object in doing such a thing.

The immense plant covers two acres of land and was furnished with modern machinery. The kilns are the only part of the plant that were not damaged by the fierce flames, and in these were one-half million brick which are as good as ever.

The brick plant has been a part of the village of Horseheads for over sixty years, having been established by Messrs. Weigand and Westlake. The former died only recently at an age of ninety-four years. The plant has been owned and conducted by the Eisenhart family for the past twenty years. It has been one of the thriving industries of Elmira's northern suburb and has been in activity the year around. It employs about fifty workmen and its destruction will prove a distinct loss to the village of Horseheads.

CRAWFORDSVILLE SHALE BRICK CO. HAS EVOLVED A SUPERIOR BRICK

The Crawfordsville Shale Brick Co. of Crawfordsville, Ind., has been experimenting on making oriental brick and have now on hand a sample which is a beautiful product for the building of outside walls, where a superior and attractive finish is desired. The brick are made of shale and in them no chemical is used to produce the rich red so that the brick will never change when subjected to the action of the weather. The company is now burning its first kiln.

CLAY-PREPARING MACHINERY*

By W. D. Richardson, Columbus, O.

Continued from last issue.

Clays Containing Limestone.

It is evident to all of you that if many of the drift clays covering the northern part of the United States are to be utilized in the manufacture of brick or other products, the limestone pebbles must either be removed or so treated as to prevent damage to the product. Prof. Bleininger has doubtless shown you the various means of treatment to prevent the limestone in the clay from doing damage to the wares, and that the first thing is to pulverize the limestone fragments to such a degree of fineness that when the brick are burned hard the lime will enter into a combination with the other minerals of the clay. This crushing of the limestone can be done with roll, if they are properly constructed and kept in order, and kept close enough together; but the safest way is to remove the pebbles from the clay. Whether this is practical or not, and if so by what method, depends upon conditions.

There are three methods that are in use for removing the pebbles from the clay.

1. The direct mechanical method of removing the pebbles from the soft damp clay as it comes from the bank.
2. The washing of the clay.
3. The separation of the stone from the dried clay.

For the first method there have come into use in Europe, in recent years, two or three machines working upon the principle of forcing the clay through small openings or grates in the end of a cylinder by means of an auger or plunger, the stones remaining in the cylinder, from which they are removed at frequent intervals. These machines are said to be efficient, but must be of rather low capacity, and it is doubtful if they would be practicable in this country.

Washing clays is not practiced in America except for high-priced products; but in northern Europe clays are washed to free them from stone for common building brick. The washing is done in plungers and the suspended clay may be settled in shallow vats or troughs, the water being drawn off and the clay left until it has become stiff enough for working. This process requires much water and space, in addition to the extra labor and long time. By the use of filter presses and a tunnel dryer, the process can be greatly shortened, but the expense is too great for adopting at the average price of common brick. Were it not for the expense, the washing process would be a most excellent one for accomplishing the desired results.

The dry process consists of drying the clay by natural or artificial means to such a degree that the clay can be whipped from the stones and separated out by screening. This method of treating clay containing limestone pebbles is more truly American, as it seems better adapted to our conditions. Prof. Bleininger will doubtless show that the drying of the clay in a rotary dryer has other desirable results, rendering some clays less liable to damage in the drying of the ware. The rotary dryer has reached a higher state of development in this country than probably in any other, and the makers of these dryers now guarantee to evaporate from eight to ten pounds of water with one pound of combustible. This renders such dryers entirely practical, even for common brick clay, when conditions make it necessary. The dried clay can be passed through a swing-hammer pulverizer and then screened, or can be passed through a special machine that whips the clay from the stone. This machine is constructed on somewhat the same plan as the hinged-hammer pulverizer except that the shaft and cylinder are vertical and the clay falls through it. This machine, the progenitor of the hinged or swing-hammer pulverizer was invented and patented about twenty-five years ago by Mr. Pratt, of Anoka, Minn., and called the Pratt Pulverizer. I used the machine in the early days of dry-press brick manufacture and I know of nothing today better for pebbly clay, though some improvements could now be made in its construction.

We have so far considered the preparation of soft and more or less moist clay. When I started in the brick business these were the only clays used. We would then have ridiculed any one proposing to make brick out of the hard shales and rocky fire clays that are now so extensively used, though it was known to us in an indefinite way that fire brick were made of some hard materials. These hard clays are naturally in a more or less dry condition and can be prepared by a different class of machinery. The preparation of such clays and shales varies somewhat with the process of manufacturing, whether by the stiff mud or by the dry-press process. For the former it is only necessary to reduce the material to the proper degree of fineness when the water can be immediately added and incorporated with the clay in a uniform manner and the clay thus tempered passed directly into the brick machine. The first operation in the preparation of these hard clays is the crushing of the large pieces in which they come from the bank or mine into pieces two to three inches in diameter or smaller. For this purpose the old method was the sledge hammer; but in recent years the

Jaw Crusher.

has come into general use. This machine is usually placed so that the discharge may be by gravity to the dry pan. The operation of the jaw crusher is familiar to all, since it is the machine employed for crushing rock for roadmaking. Some make use of the power of the dry pan to break up the clay by crushing it between special heavy pointed projections in the hub of the pan and the side of the muller. This is a patented feature in use at one large plant, and perhaps others.

Dry Pan.

This is also a well-known machine, one of the oldest pulverizers, having been used in grinding ores long before it was used in the clay industry. It is a combination machine, performing the double operation of crushing the material and screening it out as fast as it is reduced fine enough. Like all combined machines or tools, when run so as to produce best results of one operation the other operation is not at its highest efficiency; that is, when the dry pan is run at a speed to do the most grinding it has not the greatest screening capacity, and when run at a speed slow enough to screen the most clay the crushing capacity is reduced. With many clays the greatest capacity is obtained by running the pan at a lower speed than that usually specified by the makers of the pan; possibly the pan having its screen plate slightly inclined towards the circumference can be run at a higher speed than the level-screen pan. As the clay discharged from the dry pan is usually screened again the greatest capacity is secured by not using too fine screen plates in the pan itself. Many attempts have been made to increase the capacity of the pan by grinding the tailings from the screen in a separate machine, instead of returning them to the pan. This seems a wise thing to do, but in searching for a suitable machine for grinding the tailings and in providing for its erection and the re-elevation of the clay, it is generally found that the cost of installation will be about as much as that of another dry pan, and that the additional dry pan would be the more useful equipment.

* Read at the 1909 Meeting of the Wisconsin Clay Manufactnrers' Association.

Screens.

That finely screened clays make a higher grade product than the coarse clay is now pretty generally recognized, and screens are commonly seen following a pulverizer. The most remarkable development in recent years for clay screening is the piano wire screen. This screen was used extensively in England before it was made in this country. The making of a good piano wire screen is not so simple a problem as it looks to be, though the efficiency of the piano wire screen in any form is surprising to one who has never before seen one in operation. In some cases where hard clay, especially of a lamellar structure, are used and only the finest product is desired, the piano wire screen gives more or less trouble from the wedging of the thin plates of clay between the wires, spreading them so as to allow too coarse material to pass through. This is now largely prevented by using a greater number of spacing bars. It cannot be said, however, that the piano wire screen is the best for all conditions or purposes; but it can safely be said that it has a wider adaptation than any screen that has been hitherto brought into use in the clay industry.

Fine Clay Feeders and Mixers.

Where pulverized clay or shale is used it is presumed that all understand the advantage of having a large hopper or bin for storing a sufficient supply of fine clay to provide against stoppage of the brick machine on account of the stopping of some part of the mining, hauling or pulverizing equipment. From this bin the clay is usually fed by gravity to the pug mill or dry press. With the dry press this arrangement produces no trouble, provided the clay has been properly prepared; but the feeding of clay to the pug mill by gravity makes uniform tempering of the clay an impossibility, even with the most expert operator. The supply of clay depending not only upon the irregular running of the clay preparing machinery, but also upon a slide of clay in the bin, must vary constantly and often so suddenly as to baffle the efforts of the temperer, even though he be giving careful attention, which sometimes is not the case. Moreover, an uneven supply of clay to the pug mill and brick machine produces an uneven speed to the bar of clay issuing from the die, which means for a part of the time improper lubrication of the die and a rough brick, as well as an unsteady output. The rotary disc feeder extensively used in Europe and now coming into use in this country is a simple and effective remedy for this trouble.

Steamers.

In preparing hard clay for a high-grade product, either by the stiff-mud or dry-press process, there should be mentioned the advantage of steaming the pulverized clay and storing it in bins for several days. This storing and curing of the clay insures a uniform mixture of all the variations in the bank, and also produces a soft homogeneous mass of easy working quality and high plasticity, essential conditions of high-grade ware. The clay steamer is often a home-made affair, but is worthy of good construction based upon practice. The clay is conveyed to the storage bins and from the storage bins to the brick machine, either by a belt conveyor or by cars. The car method of conveying is to be preferred where practicable.

In the making of dry press brick there is often placed above the press a machine called a mixer and feeder. This is sometimes an advantage, especially where the clay has not been well prepared. Its special object is to mix the coarse and fine particles evenly so that a uniform brick can be made, instead of one having the coarse particles mostly in one end.

In preparing clay for the molding of fine brick, terra cotta, etc., in large pieces, as well as pottery, a more elaborate preparation is sometimes practiced, including the washing of the clays, their drying, pulverizing and mixing, tempering in wet pans or closed plug mills, and curing or ageing in bins, in a warm, moist and more or less dark place. This renders the clay more pliable to the molders' skill, increases its bonding power and tensile strength and lessens its liability to produce damage in drying of the ware.

The more one studies clays and their manipulation, the more he marvels at the wonderful adaptability of this common and widely variable material for the manufacture of domestic wares and structural products, and the more clearly there is opened up to him the wide vista beyond the limit of his knowledge. No subject connected with the manufacture of clay products offers a more fruitful field of study and research than that of the preparation of the clay. The common brick manufacturer has a more difficult problem in most cases than the potter or the manufacturer of high-priced wares, since he is limited in his operations—in the changes that he can make in his raw material—by the inexorable requirements of a low priced product. But with the advance in our knowledge of clays and the improvements in methods and machinery, much can be done today that was not practical a few years ago. The growing competition of other structural materials such as cement concrete and sand-cement and sand-lime brick makes it incumbent upon the brick manufacturer to produce a better brick and a cheaper brick in order to make the use of clay brick keep pace with the increase in population and wealth.

A NEW CEMENT PLANT FOR IDAHO OF VERY LARGE CAPACITY

Three million dollars is the stated capitalization of a corporation headed by J. S. Irvin of Ottawa, Ont., managing director of the International Portland Cement company, with a capital of $2,000,000, and head of the Exshaw Portland Cement Company, of Alberta, which purposes to erect a cement factory near the town of Orofino, Idaho, southeast of Spokane, Wash., where it has just acquired 223 acres of clay and lime beds, known as the J. M. Bartlett tract.

The plant, covering 12 acres under a single roof, involves an initial expenditure of $1,500,000, and will be the largest of its kind in the United States. C. A. Reid, of Spokane, will be manager, with R. B. Hassan and R. J. Klossoki as engineers. Dana Child, a millionaire of Spokane, is heavily interested in the project. Three hundred men will be employed, turning out 2,500 barrels of cement daily. Storage rooms will be built for 30,000 barrels of finished product, 30,000 barrels of clinker and 30,000 barrels of lime and clay. Work on the foundation will begin early next January.

Experts say that the Bartlett tract probably contains the richest deposit of lime in the United States, the product being 99 per cent pure. No better location could be secured. On one side towers the mountain lime and on the opposite side of the canyon is an immense deposit of clay, containing silica and alumina for excellent cement manufacture, while between these two immense deposits will be located the factory.

Gravity will place the matter in the plant ready for grinding and treatment. Until other arrangements are made coal for the burning rooms will be shipped from Wyoming and Montana. The company now has negotiations under way for the installation of an electric plant on one of the creeks above Orofino, these plans at this time being immature.

The Élite Pottery Co., of Trenton, N. J., has been named as a defendant in a patent infringement suit brought by the Trenton Potteries Co.

REPORTS FROM ALL SECTIONS OF THE WESTERN POTTERY DISTRICT SHOW A DECIDED IMPROVEMENT

Fall business has started off with all potteries in the Upper Ohio Valley with rather a pleasing rush and proof of this is given when the report comes from the shops that some decorating shops have been compelled to work Sundays and at nights in order to get their business through promptly.

Specialties are having an excellent sale, although dinnerware is having a heavier sale than some of the manufacturers anticipated. In several instances, where new shapes have been brought out, and a fair run of business was expected on open stock patterns, these sales have exceeded expectations, and in many instances it is impossible to get business out according to shipping instructions. However, by working the shops extra time the manufacturers will soon be caught up.

With representatives of English and German decorating and color firms reporting an increase in orders, and with pottery supply manufacturers running their plants in nine instances out of ten full time in order to keep up with orders, the condition of the western pottery trade during the past fortnight shows considerable additional strength.

Of the thirty odd potteries in this locality some are running full time and are crowding all departments in an effort to get orders out on time. Others, however, are not quite so busy, hence the district is not yet up to normal. I have been advised, however, that the three local potteries, their business for 1909 will far exceed that of 1907, which every pottery manufacurer has conceded to have been the banner year in American pottery affairs.

Not as many kilns are being operated now as then. This is explained by the fact that several plants in operation in 1907 have retired from business—one at Niles, Ohio, and another at Salineville, Ohio, and another at Akron, Ohio.

On the other hand, the Homer-Laughlin China Co. has added 32 kilns to its capacity and this more than totals the number of kilns that have gone out of business since 1907. But the Laughlin interests now operates 64 kilns. Potteries that have gone out of business have been independent concerns and had to paddle their own canoes. With a capacity of 64 kilns, one firm is enabled to take care of an enormous trade.

The change in the official family of the Knowles, Taylor & Knowles company was one of the surprises of the trade during the past fortnight. W. H. Cook, who has been placed in charge of the manufacturing end of this plant (which includes three properties), is conceded one of the most successful in the trade. A number of years ago he was in charge of the manufacturing department of the Sevres China company, which was the original Sebring pottery. An inducement was offered him at Kittanning, where he took a similar position with the Pennsylvania China company, which is headed by Charles Howell Cook, of Trenton, N. J. He remained there but a brief season, however, for it was the desire of his family that he return to the East Liverpool district. He agreed to such "demands" and when he did come back he was given charge of the manufacturing end of the Edwin M. Knowles China company, at Chester, W. Va.

Quick to realize the worth of Mr. Cook when the change in the Knowles, Taylor & Knowles company took place, Mr. Cook was secured through Mr. Edwin M. Knowles. With Mr. Knowles, however, he just gave Mr. Cook a better position, taking him from a smaller property and putting him in a 31 kiln plant. Mr. Cook is well known in Trenton and the pottery districts of England.

Within a few weeks preliminary plans will be laid by officials of the United States Potters' Association for their thirty-first annual meeting, which is to be held at Washington, D. C., probably during the second week in December. Notices of this convention will be sent out in due season by Secretary-Treasurer Charles C. Ashbaugh, of the West End Pottery Co. of this city. Vice President Hugh A. McNicol, of the Potters' Co-Operative Co., a local corporation, will become the head of the organization next season, succeeding President Joseph Mayer, of the Mayer Brothers Pottery Co. of Beaver Falls, Pa.

The capital stock of the Star Pottery works, of Elmdorf, Texas, has been increased from $8,000 to $16,000 in order that additional capital can be had for extensions to the business.

News has been received here that Edward J. Owen, for many years identified with the East End China Co., then with the East Liverpool Potteries Co. and more recently with the Owen China Co., of Minerva, O., has plans about completed for the erection of a new pottery at Big Rapids, Mich. It is understood that the board of trade of Big Rapids will raise $60,000 through the sale of a number of lots, and that in return for this bonus Mr. Owen agrees to spend in the neighborhood of $150,000 in the erection of the pottery. He also contemplates giving employment to 200 or more people. Should he be successful his will be the only white ware pottery in Michigan. The location is in a furniture community.

The Windsor pottery works at Oakland, Cal., has been sold for $29,059.95 in satisfaction of a promissory note and deed of trust for $13,000 given the Market Street bank, San Francisco, in 1906, has started an action in the California superior court to set aside the sale.

The note with interest and other expenses calls for the payment of $24,000. Ira M. Cobe who purchased the assets of the Market Street bank, ordered the sale and the works went to J. H. Mooser, who was the highest bidder. It is declared that the plant is worth at least $70,000.

The original Windsor pottery owners assert the sale was illegal, because the vote itself was given by Windsor's California pottery after the charter of that corporation had been forfeited for the non-payment of license tax.

The death of Mrs. John Patterson, aged 73, is the close of a most strenuous life. Mrs. Patterson was born in Ireland. She came to the United States over 50 years ago and located in Trenton, N. J., where she resided 13 years. She then moved to the western pottery district, and located in Wellsville, where she built and managed a little yellow ware and Rockingham pottery for years. No hour was too early for her to arise, go to the plant and look after its interests. She continued this daily for many years and until her two sons, John and George Patterson, could take over the property, manage and operate it. Then the plant was changed to the Patterson yellow ware pottery, and it is being successfully operated today.

By her diligent efforts Mrs. Patterson gathered considerable wealth all of which she invested in real estate, both in Wellsville and East Liverpool. In this city her best holdings are located in the heart of the business district and are extremely valuable. She was the mother of ten children, three of whom are women. One son is a resident of Detroit, Mich., another resides in Cleveland, O. She possessed sixteen grandchildren. Her husband, John Patterson, is a veteran of the Civil war. Mrs. Patterson had the distinction of being the only woman to build and operate a pottery in the United States.

Frank Jones, for many years employed at the plant of the Greenwood China company, of Trenton, N. J., who has been in the western district for several weeks, has left for Sebring, where he has become associated with the French China company.

PACIFIC COAST NEWS ITEMS

The yield and value of the mineral substances of the State of California for the year 1908 are to be made public in the form of a pamphlet that is now in the hands of the State printer and will be issued soon in complete form. In the list of mineral productions of the State clay products occupy fourth place. The total value of structural materials in 1908 was $10,132,179 and of this more than one-fourth was for brick, terra cotta and other products of clay. Of this brick comprised a value of $2,506,495 while pottery products were valued at $325,147. According to the list compiled by the State Mineralogist brick clays were utilized in the following counties of the State: Alameda, Contra Coast, Fresno, Humboldt, Imperial, Kern, Kings, Los Angeles, Marin, Mareda, Mendocino, Merced, Orange, Riverside, Sacramento, San Bernardino, San Diego, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Shasta, Solano, Sonoma, Tehama, Tulare, Amador, Monterey, Placer, Stanislaus, Yuba and Venture.

Clay for pottery came from Alameda, Amador, Calaveras, Los Angeles, Placer, Riverside, Contra Costa, Fresno, Orange, Santa Cruz, San Joaquin, Solano and Ventura. All of the fuller's earth came from Kings County and the glass sand from Alameda, Los Angeles and Monterey counties. The most marked developments during the past ten months in the clay line in California has been the opening and developing of new beds of fine pottery clays and within a short time it is expected that the use of this material will be greatly extended. The products of the clay beds located above Sacramento are declared to be equal in quality and beauty to those of any beds anywhere in the country and it is here that so much work is being done preparing to market the product on a large scale. The use of tiling and terra cotta facing has become very noticeable in San Francisco and is steadily growing. The use of cement for finishing buildings is falling off materially, and many reenforced concrete buildings are now being faced with tiling, this being considered lasting and besides the desired color effects are so easily secured.

Up to the time of the fire the firm of Gladding, McBean & Co. devoted a large part of their attention to the manufacture of sewer pipe, terra cotta for fireproofing and other pottery articles such as laundry-trays, etc. Some terra cotta for facing was made but the demand for this had not materialized to such an extent that special attention could be given to the work. Since that time the big plant at Lincoln has been kept busy on architectural terra cotta and a great many extensions and improvements have been made to take care of this rapidly growing branch of the business. While the winter season is now at hand when building is supposed to be at low ebb and manufacturing plants as a rule are closing down, the architectural department of the clay-working establishment of this firm is now employing as many men as it ever has, even at its busiest period, and more than that additional men would be given employment could the right persons be found. Just a short time ago a number of expert workmen were secured from Perth Amboy, N. J., one of the great centers of the pottery industry in the United States and these men are now settled at Lincoln. At the present time work is being rushed on the erection of another large drying room and other additions are being made to other parts of the plant to keep up with the heavy demand that is being experienced even at this season of the year. The terra cotta department of this firm was established by J. B. De Galyer almost twenty years ago and under his supervision has grown to its present proportions, the growth having been very rapid of late. Experts who have examined the work that is being turned out for the Columbia Theater in San Francisco assert that it is the very finest of its kind that has ever been done in this country.

Another company that is now commencing to make a mark for itself in the Lincoln district is that of the Pyrmont Brick Company, a concern that has just entered that field, and which is now busy at work erecting suitable buildings for the great industry that is to be carried on. The plant is not in working order yet and it will probably be almost a year before the finished products will be placed on the market but in addition to making rapid work on the plant development work at the beds is being carried on and several carloads of clay are being shipped out daily. A spur track from a railroad has been built to the beds making transportation easy. President M. J. Dillman, is on the ground the most of the time, directing operations and making a study of the different varieties of clay found in the pits.

The Los Angeles Porcelain and China Manufacturing Company is the name of a new concern that has been incorporated recently at Los Angeles with a capital stock of $100,000. Those interested in the company are J. Krisle, L. D. Brode, C. M. Jay, J. Kirkham and J. H. McKnight.

There have been no delays this summer and fall at the big plant of N. Clark & Son in East Oakland since the completion of the high chimney to carry away the smoke and no complaints have been made of any nuisance from this source. At the present time the plant is very busy on sewer pipe, a large part of which will be used in the neighboring towns which have recently voted bonds for sewer construction. This company has also been busy on the manufacture of face brick and has a number of large contracts to fill in San Francisco during the coming winter. The rainy season has already set in here but it is not thought that this will interfere with building operations in San Francisco to the extent it usually does as there is quite a demand for buildings and work is being rushed forward as fast as possible.

The Vallejo Brick & Tile Co., at Vallejo, Cal., has all the orders on hand that it can well attend to with the present equipment and has plans drawn for quite an extensive addition to the plant but it is not considered wise to commence work on these until spring.

The Hyfire Brick Company recently organized by Oakland capitalists to operate at Vallejo is preparing to install a large amount of new machinery in the spring and some brick may be turned out with the old equipment prior to that time.

FIRE BRICK PLANT WILL NOW MAKE PRESSED BRICK.

Another Denver, Colorado, manufacturing establishment has followed the course of the cotton mills, the paper mills and other big factories which have been started in Denver. The Western Fire Brick Company, which was incorporated to manufacture fire brick and built a plant at Argo, has found conditions against the business and has sold the plant and property to the Denver Sewer Pipe and Clay Company. The new owners will convert it into a pressed-brick manufacturing plant.

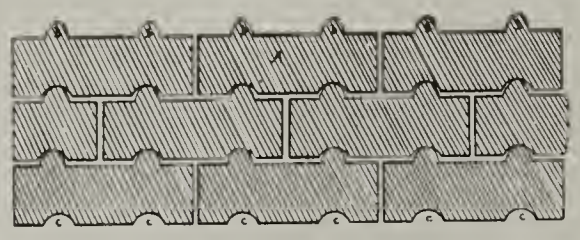
The Western Fire Brick Company was organized by William Geddis, David Seerie and S. P. Adams to manufacture brick for grates, stoves and all purposes where fire brick are used. The plant was located next to the plant of the Denver Sewer Pipe & Clay Company at Argo. It is claimed there was not a sufficient market for the product. The property was transferred to the new owners for a consideration of $50,000. The Denver Sewer Pipe & Clay Company will remodel the plant and equip it for the manufacture of pressed brick in connection with its present business.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

926,062. Paving-Block. William Hanley, Bradford, Pa. Filed Feb. 9, 1909. Serial No. 476,945.

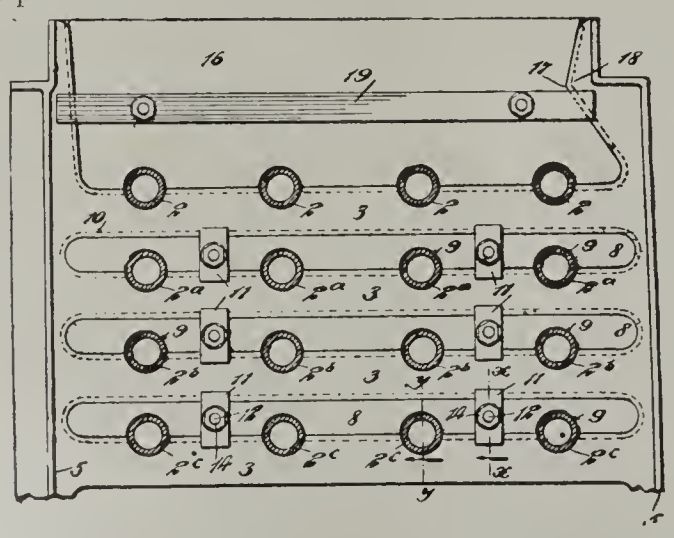
A paving brick having projections on one of its sides and depressions on the opposite side thereof, said projections being of greater length and less width than the depressions whereby contact is permitted between the end of the projections and the bottom of the depressions of adjacent blocks, the difference in width allowing for contraction and expansion and irregularities in manufacture, substantially as described.



A pavement comprising a series of blocks, each block having projections on one of its faces and depressions on its opposite face so as to interlock with adjacent blocks, the projections being of greater length and less width than the depressions, whereby an interlocking structure is secured, rendering unnecessary the use of curbing and at the same time providing for irregularities in manufacture, such as shrinkage, without interfering with the interlocking action, substantially as described.

926,924. Brick-Drying Rack. Edward H. Callaway, Westfield, N. J., assignor to The American Clay Machinery Co., Bucyrus, Ohio, a Corporation of Ohio. Filed Mar. 20, 1908. Serial No. 422,355.

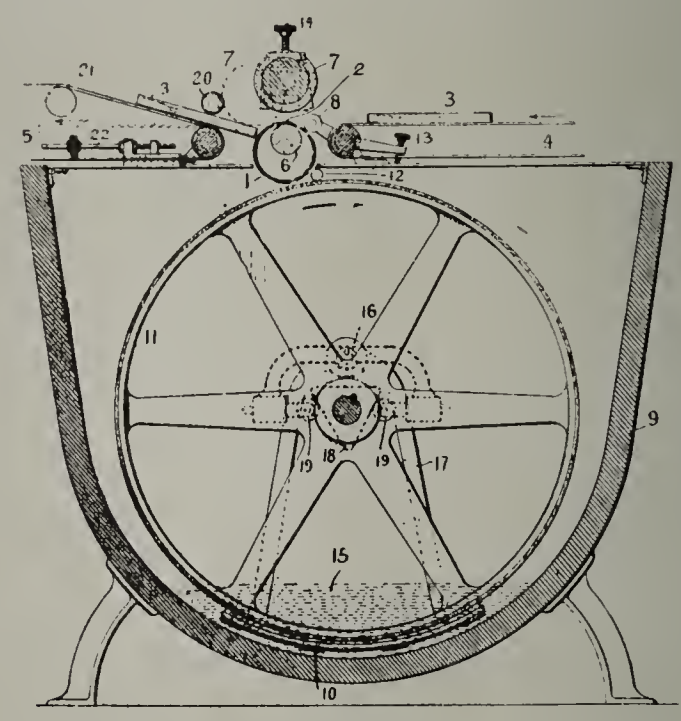
The combination with heating pipes, of a supporting standard therefor, consisting of a series of horizontal cross pieces arranged one above another and having curved notches therein for receiving the pipes, and retaining strips fitting into the spaces between said horizontal cross pieces and having corresponding curved notches engaging the pipes, together with means separate from the pipes for holding the retaining strips in place.



In a drying mechanism, the combination with heating pipes, of a standard supporting said pipes, consisting of horizontal bars arranged one above another and united at the ends, said bars being suitably spaced apart and provided with notches for receiving the pipes, and retaining strips fitting tightly into the spaces between the said bars and entirely filling said spaces with the exception of the openings that receive the pipes, said strips being provided with notches engaging the pipes, said pipes fitting closely in the openings that receive them, and clamping means including bolts and plates for keeping the strips in position.

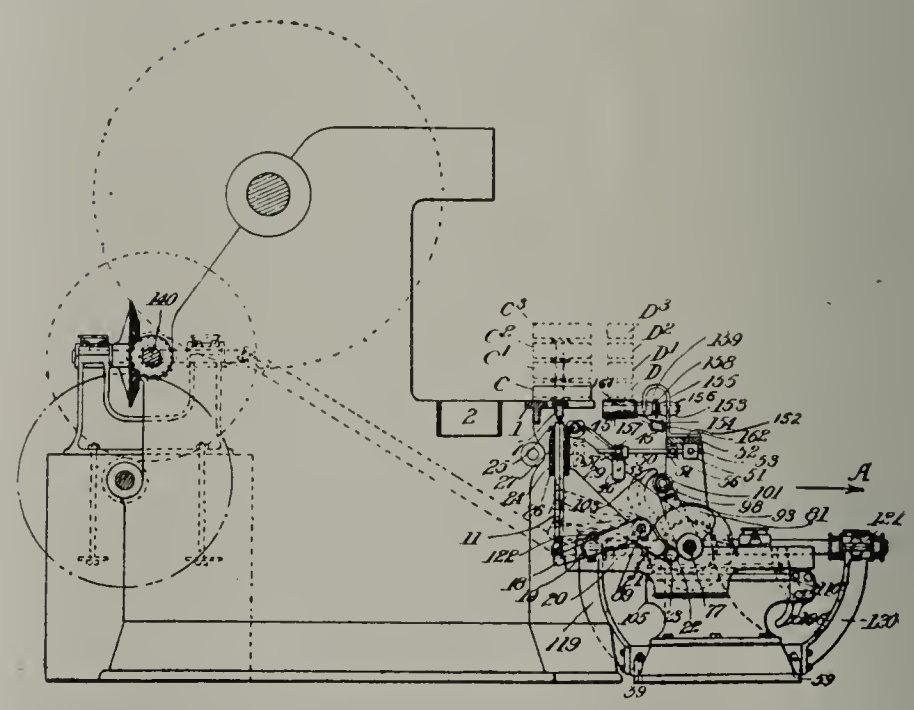
926,059. Coating-Machine. Frederick E. Goldsmith, Middletown, Ohio, assignor to The Ceramic Machinery Co., Hamilton, Ohio. Filed Apr. 3, 1905. Serial No. 253,720.

In a coating machine, the combination of a coating carrier, means for causing a flow of coating into and through the carrier, means for conveying detached objects to be coated to the carrier, means for carrying the objects away from the carrier, and means for removing the coated detached objects from the carrier without any undue or uneven deposit of coating thereon.



In a coating machine, the combination of a moving coating carrier, a rotating transfer feeding surface in close proximity to the carrier but out of contact therewith, and means for moving such transfer surface at a speed different from that of the movable coating carrier.

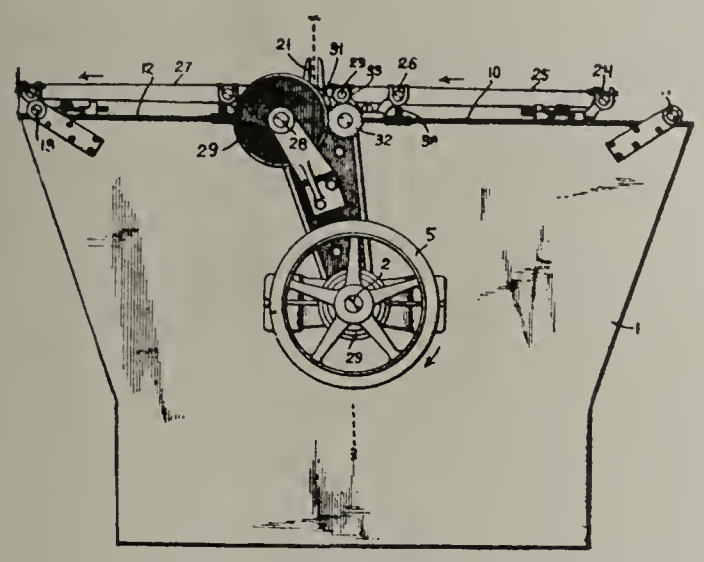
927,834. Off-Bearing Attachment for Brick-Presses. William R. Cunningham, Bucyrus, Ohio, assignor to The American Clay Machinery Co., Bucyrus, Ohio, a Corporation. Filed Apr. 7, 1908. Serial No. 425,677.



An attachment for a press, said attachment comprising a conveyer which is adapted for movement in a direction crosswise of the press, a support upon which the pressed article is delivered from the press, and carrier-means for automatically removing the article from the support and transferring it to a point vertically over the conveyer and with its major axis substantially parallel with the direction of movement of the conveyer, said conveyer including spaced rollers through the interspaces of which the carrier means operate to deposit the article thereon.

926,182. Tile-Coating Machine. Frederick E. Goldsmith, Hamilton, Ohio, assignor, by mesne assignments, to The Ceramic Machinery Co., Hamilton, Ohio. Filed May 1, 1903, Serial No. 155,115. Renewed May 31, 1904. Serial No. 210,579.

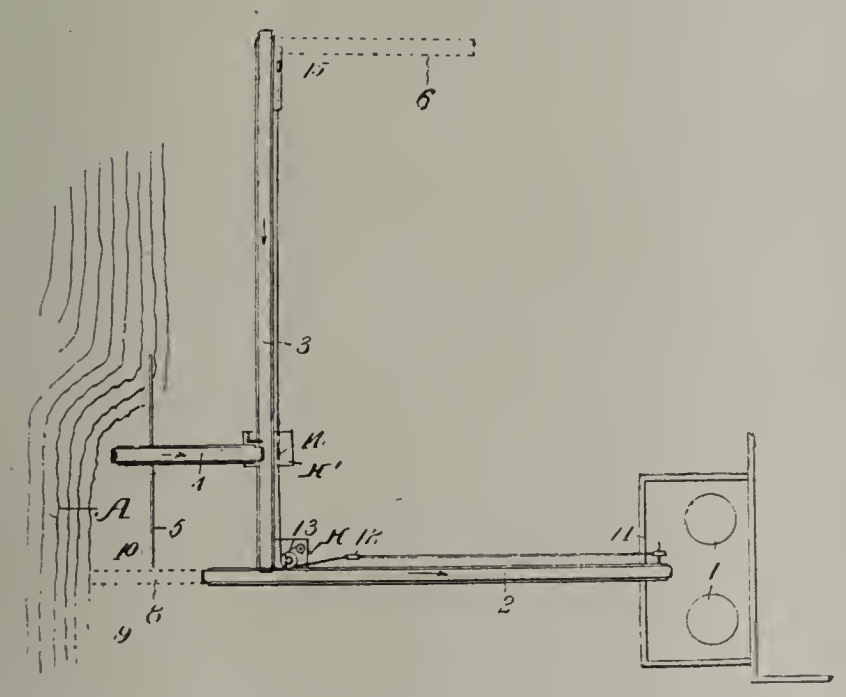
The combination with a coating roll, of movable transmitting means for discharging coating material from the vat into a pool beneath the roll into which the latter dips, substantially as described.



The combination with a vat for the coating material, of a drum running in the vat, a coating roll arranged in proximity to the drum, and a dam arranged in proximity to the drum and coating roll, and against which coating material is discharged to form a pool into which the roll dips, substantially as described.

928,183. Conveying System. William R. Cunningham, Bucyrus, Ohio, assignor to The American Clay Machinery Co., Bucyrus, Ohio, a Corporation of Ohio. Filed Sept. 3, 1908. Serial No. 451,504.

A system for conveying loose material, said system including a belt-conveyer located at the place of loading, a second belt conveyer operable across the delivery end of the first-named conveyer and adapted to receive the material there-

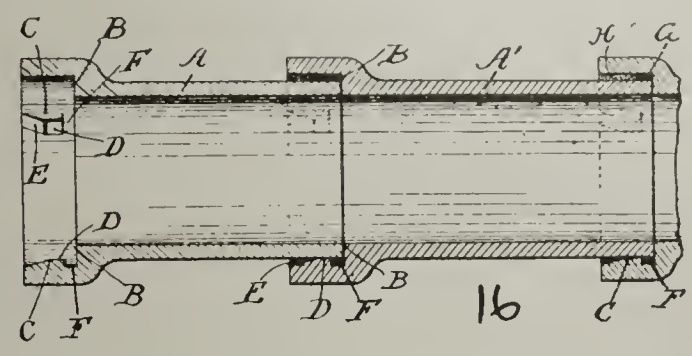


from, supporting frames upon which said conveyers are mounted, a support for the receiving end of the first-named conveyer and a track upon which the support is movable in a plane substantially at right angles to the direction of movement of the conveyer, and a driving head mechanism at the delivery end of the first-named conveyer and shiftably supported on the framework thereof.

In a system of the character described, the combination with a belt conveyer and a track or guide rail arranged substantially parallel therewith, of a belt conveyer arranged substantially at right angles to the first conveyer and extending therefrom to a point proximate to the material to be conveyed, a support for the second-named conveyer having a bearing engaging and operable over said track or guide rail, a drive-cable extending parallel with the first-named conveyer, sheaves or pulleys for said drive cable, and intermeshing gears and transmitting shafts between said sheaves or pulleys and the head end of said second-named conveyer.

927,353. Drain or Sewer Pipe. William L. Jackson, Brookland, D. C. Filed Mar. 9, 1909. Serial No. 482,284.

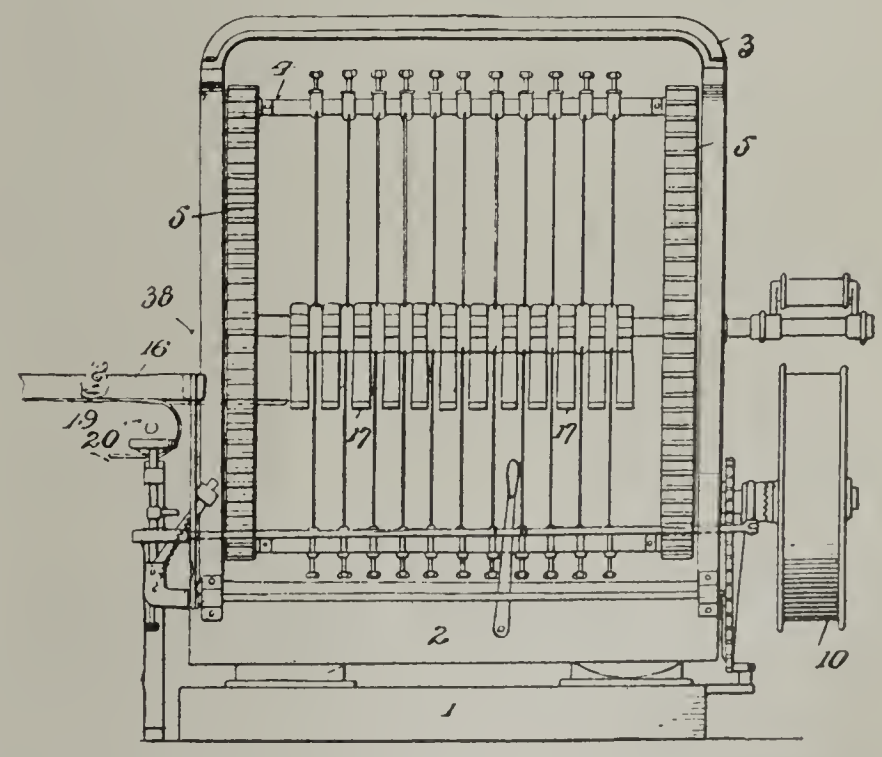
A pipe section having at one end a socket of greater diameter than the body part and formed with tapering lugs integral therewith provided with means to retain a packing and cement around the spigot end of a pipe section.



A pipe section having at one end a socket of greater diameter than the body part and formed with tapering lugs integral with the socket wall, provided with a pocket to retain a packing and cement around the spigot end of a pipe section, and having inclined surfaces extending to the edge of the socket to enable a pipe section to be inserted into an adjacent socket and be guided by the inclined surfaces of the lugs into proper alinement and held against either vertical or lateral displacement, substantially as set forth.

927,878. Brick-Cutting Machine. John C. Ross, East Liverpool, Ohio. Filed Oct. 20, 1908. Serial No. 458,617.

In a brick cutting machine of the type specified adapted to have a bar of clay continuously fed thereto, a clamp for gripping the bar of clay to move the cutting mechanism with the



bar of clay during the operation of the cutting mechanism, when severing the clay bar into bricks.

In a machine of the character described adapted to have a bar of clay fed thereto, the combination of cutting mechanism, operating means therefor including a clutch, means for throwing the clutch into engagement, a lock for securing the clutch throwing means, an arm adapted to be moved by the cutter operating mechanism and a release device positively and automatically actuated by said arm to liberate the clutch throwing means to permit automatic disengagement of the clutch.

CLAY RECORD.

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CLAY RECORD PUBLISHING COMPANY

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"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

Keep your motive pure and the results will take care of themselves.

If you meet all things with kindness you will find this a fine old world.

If it were not for competition we should be living in the woods in a state of savagery.

Now is the time that you had better be considering your advertising. Keep it up to date and do all you can possibly afford.

In closing a contract or settling a dispute it makes a great difference whether you are in your own office or in the other fellow's.

No factor is so necessary in building up a business as credit, and no factor is so necessary in building up credit as truth.

Subscriptions to the CLAY RECORD are just as thankfully received in October as in any month of the year. Just one dollar for the twenty-four issues.

The employer and the employe must realize that each must make profit. It is because there are so many ingrates and so many four-flushers that so few succeed.

The business man should prepare for the future so that if ill health overtakes him he may have the money to surround himself with comforts, travel and the best of care.

When you get tired of calling Ohio the Buckeye State you can call it the Clay State. Her clay plants took the lead during 1908, turning out products worth $26,622,490, or nearly twenty per cent. of the country's total output.

MUNICIPAL BRICKLAYING AND ITS COST

In their recently published report to the original Boston Finance Commission, Metcalf & Eddy, consulting engineers to that body, present some glaring examples of the efficiency with which the work of the city was accomplished. When it came to bricklaying, one of the worst cases of inefficiency was revealed. Based on a week's record the best work done by one mason consisted in laying 240 bricks per hour, but one individual succeeded in reducing his efficiency to 13 per hour, about one in every five minutes. Under competitive contract similar work was done for the Metropolitan Sewerage Commission, the lowest laid number being 94, and the largest 570 per hour.

Measured on a dollar and cents basis the labor cost of bricklaying on Metropolitan Sewers on competitive contracts varied according to conditions from $1.82 to $3.23 per thousand. When similar work was done on contract for the City of Boston it cost from $2.98 to $7.35, but the supreme evidence of inefficiency was shown by costs varying from $9.04 to $18.34 when done by day labor. In a word the city paid from three to six times as much as the Metropolitan Board.

SAND-LIME BRICK.

Geological Survey's Report on 1908 Production.

The sand-lime brick industry is a comparatively new one in the United States, having had its beginning in Michigan City, Ind., in 1901. Its progress was slow at first, the value of the production in 1903 being only $155,040. From that time the value increased each year until 1907, when the maximum of $1,225,769 was reached. In common with other building materials there was a decrease in 1908 in the production of sand-lime brick to $961,226. The number of plants reporting made a rapid growth from 16 in 1903 to 94 in 1907, with a slight decrease in 1908 (to 87).

Common, front, and fancy brick were manufactured from sand and lime in 1908. The average price per thousand for common brick was $6.63, as against $6.61 in 1907 and $6.71 in 1906; for front brick the price was $12.16, against $10.96 in 1907 and $10.42 in 1906. In 1908 common brick composed 83.57 per cent. of the value of all bricks and front brick 15.37 per cent.

Thirty states reported both in 1907 and 1908, Alabama dropping out of the list in 1908 and Montana appearing. Of the individual states Michigan, as in 1907, was the leading state in 1908, reporting bricks valued at $138,809. Florida was second in both years.

An advance chapter of "Mineral resources of the United States, calendar year 1908," contains tables showing the production of sand-lime brick by states in 1907 and 1908. The pamphlet may be had free of cost by applying to the Director, United States Geological Survey, Washington, D. C.

OBITUARY

Zacharias McPherson died at his home in Sewickly township, near Pittsburg, Pa., of old age. The deceased was once a prominent brick operator and was 83 years of age. He leaves a widow and ten children.

Jacob Biehl, a prominent resident of Pana, Ills., died at the St. Mary's Hospital in Decatur, after several weeks of illness of a complication of diseases. Mr. Biehl successfully conducted a brick yard south of this city.

John A. J. Dixon, 85 years old and for over 45 years a brick manufacturer in Baltimore, Md., died at his home, 1614 Harlem Ave. He retired from the brick business some years ago. In 1848 he started in the business for himself.

FIRE! FIRE!! FIRE!!!

The sheds over the kilns of the R. H. Collins Brick works near Alpena, Mich., were destroyed by fire.

The stables of A. McCutcheon, the St. Boniface, Manitoba brick yards were destroyed with their entire contents, including forty horses, equipment and feed. The loss is $10,000.

The plant of the Empire Pottery owned by the Trenton, (N. J.) Potteries Co., was damaged by fire to the extent of $2500. It is thought a cigarette stump in the packing room started same.

The plant of the Columbia Silica Co., near Portage, Wis., was damaged by fire to the extent of $5000. The fire was confined to the sand plant and did not reach the department recently built to manufacture silica brick.

The plant of the Foxhall Brick Co., at Passaic, N. J., was totally destroyed by fire, the loss is $40,000. The plant was closed to give the machinery an overhauling. Thomas Foxhall and his father were the principal stockholders.

The New York Roofing Tile Co's. plant at Malden, N. Y., near Saugerties, was destroyed by fire causing a loss of $40,000. The insurance on the plant was only $10,000. The president of the company is Lucius Washburn of Albany.

The plant of the Horsehead (N. Y.) Brick Co., was completely destroyed by fire causing a loss of $100,000. Insurance only $25,000. R. G. Eisenhart is the treasurer and general manager of the company. It is thought it is the work of an incendiary.

BRICKMAKERS CLAY RICH IN SILVER

Excitement was aroused in Springdale, Wash., when J. W. Gillingham, owner of a brickyard one mile north of town, exhibited returns from an assay of a clay taken from his land, made by a Spokane assayer, W. H. Stowell, showing 147 6-10 ounces of silver to the ton, or a market value at 50 cents an ounce for silver of $73.70. Mr. Gillingham has been making brick for two years. With Herbert Cook, a civil engineer, he began experiments with the clay finding it would not make good brick, looking for traces of iron, when Mr. Cook discovered it contained silver in large quantities.

Large quantities of the clay were sent to the Washington state college at Pullman and to assayers for chemical analysis.

There is a large deposit of the clay in which the silver occurs and it is supposed the bed extends along Sheep creek for miles. It is of a silica formation, nearly identical to the ore taken from the now famous Republic mine. When dry it can be pulverized between the fingers.

ACCIDENTS, DAMAGES AND LOSSES

The Danville (Ills.) Brick Co., has been sued for $5000 by Chauncey R. Hibbs, for being injured while wheeling brick.

John Kopsheiver, an employe of the Manteno (Ills.) Brick Co. was drowned while seining in Forked creek, seven miles south of town.

The Salmen (La.) Brick & Lumber Co. has been sued for $37,500 damages for two employes being injured by machinery owned by the company.

A bill has been filed at Pittsburg, Pa., asking for a receiver for the Phoenix Clay Pot Co. J. H. Johnson claims that they cannot meet the pressing debts.

Angelo Ottogalli, employed at the yards of the Port Credit (Ont.) Brick Co., died from injuries received by being caught in the elevator shaft at the plant.

A petition in involuntarily bankruptcy has been filed against the Morrison-Trammel Brick Co., of Rome, Ga. The liabilities are about $40,000, assets $30,000.

Charles Freeman, a bricklayer was drowned in a claypit at Gillies Brick Works at Hackensack, N. J. It is supposed he walked into it in the dark as he had been drinking.

A receiver has been appointed to take charge of the affairs of the American Clay Products Co., of Forty Fort, Pa. The appointment was made at the request of G. A. N. Thone.

A premature explosion of dynamite in the shale pit of the Crawfordsville (Ind.) Shale Brick Co. killed Charles Hubble and seriously injured Jasper Thompson. He will recover.

Thomas Hayes, treasurer of the Terra Cotta Workers' Union branch at Streator, Ills., and an employe of the Barr Clay Co., has disappeared. It is supposed he is mentally deranged.

John Fiches of Wellsville, O., has filed a petition against the McLain Tile Brick Co. at Lisbon, Ohio, asking damages of $5,000 for injury to him while he was a miner in the employ of the company.

Former State Treasurer Wm. H. Berry was working about his brick yard at Chester, Pa., when his hand caught in a pair of rolls and it was drawn into them, drawing it out after it had been badly smashed.

Charles Litterer, a well known brick manufacturer of Marysville, Tenn., got his clothes caught in the brick machine and before the machine could be stopped both legs were ground to a pulp so they were taken off.

The estate of M. H. Gillott has filed a $15,000 damage suit against the Sheffield (Ia.) Brick & Tile Co., for the death of Mr. Gillott caused by his being caught in the machinery and injured so that he died shortly after.

An explosion of gas followed by fire ruined the kiln house of the Omaha (Neb.) Brick, Paint & Tile Co., and severely burned Alex Barron, the night-engineer. P. E. Iler is president and the heaviest stockholder of the concern and his son is the manager.

THE MT. SAVAGE WORKS EXPERIENCING PROSPERITY

The Savage Mountain Fire Brick Works at Frostburg, Md., are experiencing the returning of prosperity. During the dull times the trade at this plant did not amount to a car load of brick a day. Now from twelve to fifteen cars a week are being shipped. The kilns at the plant are being enlarged.

BIG TILE KILN BLOWS UP WITH TERRIFIC FORCE

With a roar that could be heard all over the southeastern section of the city and which shook buildings for blocks around, a tile kiln at the Omaha Brick, Paint and Tile company, located at Second and Hickory streets, Omaha, Nebr., blew up about 10 o'clock at night, setting fire to the kiln house, wrecking the walls and seriously injuring Alex Barron, the night engineer. No estimate of the damage done could be made, but it will probably amount into the thousands.

The cause of the explosion is somewhat of a mystery. Night Engineer Barron opened the door of the furnace under the kiln to attend the fire and immediately there was an explosion which shook the main building, where the kilns are located, to the foundation. Barron was carrying a lantern and it is thought that possibly this ignited the gas which had accumulated under the kiln.

With the flash Barron, with rare presence of mind, threw himself flat on the floor and thus escaped what seemed to to certain death. His face, arms and hands were badly burned, but he managed to retain his senses and crawl away from the ruins. He was taken to the police station, where the doctor attended him and he was sent to his rooms. While serious his injuries are not considered dangerous.

The kiln which exploded was about 100 feet long and eight feet wide, and was one of twelve which stretched the length of the tile kiln room in the north end of the main building. The fire under the kilns is kept up with oil which circulates in pipes, and it is thought that gas in some manner generated, although the engineer could not account for it.

The force of the explosion tore up the entire length of the kiln, lifting the heavy concrete top and crunching it into small pieces. A heavy brick partition between the kiln room and the press room was budged out, and windows and doors leading from the room were shattered.

Fire immediately followed the explosion, setting the frame roof ablaze and practically ruining it before the fire department could extinguish the flames.

A number of the employes working about the building escaped injury, but were badly shaken up.

The Omaha Brick, Paint and Tile company is one of the largst concerns of the kind in the city. P. E. Iler is president and treasurer and is said to be the heaviest stockholder. His son is the general manager.

MR. STITCH HOME FROM EUROPE

Former Mayor A. C. Stitch, Independence, Kansas, arrived home from his European trip October 1st. He is heavily interested in the clay industry in the gas belt of Kansas.

He is looking the picture of health, says he had a fine trip, and is mighty glad to get back to the United States and Independence. "There is no country like this," he said enthusiastically. "I would like to take some of those fellows who kick about industrial conditions here and put them up against conditions over in Europe. This is a paradise in comparison. I visited my old home town in Germany, the town where I was born. It is known as a great brick manufacturing center and I supposed, of course, that I would be able to get a lot of new ideas and suggestions on brick making. I found that there were 140 different brick plants in the place. I went to the largest one and was surprised to find that it was making only 30,000 brick a day and the common laborers were receiving only 72 cents a day. Here in Independence we are making 75,000 brick a day at our plant and we pay our common laborers $1.65 a day. They have no modern improvements whatever."

FIRE BRICK COMPANY ADDS $30,000 TO ITS STOCK—NOW IN FINE SHAPE

A business matter of importance to the community has been consummated when an increase in the capital stock of the Fulton (Mo.) Fire Brick company of $30,000 was fully subscribed and the cash paid in.

On September 6th at a meeting of the stockholders it was voted to increase the stock from $60,000 to $90,000. The entire increase of stock was subscribed by Luther Nickell and he paid to the Fire Brick company $30,000.

This puts the company on a high business footing with ample means to transact the constantly increasing business they handle.

Mr. Nickell represents not only himself in taking the increase in the stock, but other interests with him are putting in this money and there is no doubt but that they have secured control of one of the most valuable manufacturing industries in the central west.

The company owns a fine plant for fire brick manufacture, has what has been recognized as the highest grade fire clay in Missouri and the fact that its products are recognized as high grade is evidenced by its being used by the leading steel corporations and railroads of the country. In addition to the plant and clay, the company is assured of cheap fuel at all times, as it owns 600 acres of fine coal land right at the city limits.

The plant will continue to be run at its full capacity and give employment to about 125 men.

Mr. J. E. Henegar, for many years with the Mississippi Glass Co., becomes superintendent of the plant and has entered on the discharge of his duties as such. Mr. Henegar is a young man of vim and the manufacturing department under his control will no doubt be crowned with the same success that he has had heretofore.

CLAY WORKING MACHINES

The above is the name of the latest catalogue gotten up by the H. Brewer & Co. of Tecumseh, Mich. It is by far the best and most complete catalogue that this well known concern has given to the clay trade. This company was organized in 1849, the year of the discovery of gold in California. They are therefore "Forty-niners" and have made many rich whom have used their machinery the same as the hills of California have made many.

During the last few years the line of machinery made by this old concern has been greatly enlarged, so much so that many who knew them well are not aware as to the wide scope of their present operations. They are justly proud of their old machines, but conditions have changed calling for greater capacity, and this is what has been done, added capacity, weight, strength and efficiency, which fifty years of constant study and experience has developed.

We are not going to say any more about the catalogue or the machinery. If you want further information write to them, they would be glad to answer your letters.

COLUMBUS CONCERN MAKES GREEN BRICK

For some years the Columbus, Ohio, brick men have been attempting to get a satisfactory brick of a green color, but while many trials of different clays have been made, the result has not been satisfactory until now. Recently, after making a number of tests, the Warren B. Ferris Brick Company, with offices in the Columbus Savings and Trust building, erected a new factory at Mapleton, and the new brick from that plant are now on exhibition at the salesrooms of the company. The brick are a fine green in color and it is believed that there will be a large sale for them. They have stood all tests and the local company's officers expect to make the brick from the new plant famous in building circles.

CANADA'S CEMENT MERGER

The following details of the new combination effected among the manufacturers of cement in Canada are furnished by Consul A. G. Seyfert, of Owen Sound:

According to the returns made to the Dominion government by the cement manufacturers of Canada, the average price obtained by them at their works during 1908 was $1.39 per barrel. This was the lowest price ever reported by the Canadian mills. In 1906 the average price was from $1.65 to $1.70 and in 1907 about $1.60. At the beginning of the present year it was alleged by a number of manufacturers that even without any increase in price the business would be rendered more profitable by merging the large competing companies into one gigantic concern so as to be able to control the price and the output. The Canada Cement Company is the result, with a capital of $30,000,000. The new company will own and control cement-producing plants at Montreal, Lakefield, Shallow Lake, Owen Sound, Calgary, Belleville, Hull, Marlbank, Port Colborne, Exshaw, and Quebec. These localities include points from the St. Lawrence River to the Rocky Mountains.

The object of the merger is to eliminate the present excessive freight charges by distributing from the plant nearest the demand of the consumer, also to do without competitive salesmen and middlemen. The plants included in this combination are among the best constructed and most efficiently equipped in existence, with a capacity of 4,500,000 barrels of Portland cement annually. During 1904 Canada manufactured 908,990 barrels of Portland cement and consumed 1,694,988 barrels. Almost one-half, or 784,630 barrels, were imported. In 1908 the consumption was 3,134,338 barrels, and the output 3,495,961 barrels, while 469,849 barrels were imported, which means that there was a surplus of 831,472 barrels on hand at the beginning of the present year. This caused a general depression in the cement industry and a reduction in prices to such an extent that the most of the plants were closed for the time being.

CONTROL OF MARKET—OVERPODUCTION

Inasmuch as the capacity of the output of the merger is greater by a million barrels than the annual consumption, it would appear as though the aim of the company was not only to control the output, but the market of the Dominion.

Canada is rich in the raw material—marl, limestone, etc.—that enters into the manufacture of Portland cement. Promoters have taken advantage of these opportunities, and cement plants were organized all over the country during the past decade. The result is that the production is greater than the demand, and much money has been lost by the honest stockholders, for the promoter was not always too honest. The reorganization is not only to put the industry upon a paying basis, but to aid as far as possible many localities where valuable cement plants are located and which are the main local industry.

Among the names as directors of the new company are those of several Americans who are prominent in the American cement industry, which would mean that American capital is being invested in the organization of Canada's Portland cement industry.

FIRST FIRES STARTED AT HARBISON-WALKER ENSLEY PLANT

October 8th, at 12 o'clock noon, the first fire was started in the boilers of the Harbison-Walker Refractory company's new brick plant near Wylam, Ala. The torch was applied by little Miss Madeline Miller, the four-year-old daughter of Assistant Superintendent Miller of Avenue F, Ensley.

The smoke issuing from the 150-foot stack adds another industry to Ensley. The plant, when in full operation, will employ about 300 men. The starting up of this plant will add another permanent two weeks pay roll to the many now paid out in this busy, bustling Steel City of the south.

LIFE SNUFFED OUT BY DEADLY DYNAMITE

A premature explosion of a charge of dynamite at the shale pit of the Crawfordsville (Ind.) Shale Brick Company resulted in the death of Charles Hubble and the serious injury of Jasper Thompson, who was the overseer of the work.

The men were at the pit and had drilled a hole for a charge of dynamite, as they had done many times before, and the heavy charge of over 100 pounds had been placed in the hole. The hole was thirty-five feet deep and had been enlarged at the bottom by a small charge of dynamite. The heavy charge had been lowered into the hole ready to exert its deadly force. As is the custom a weight, attached to a rope, was lowered into the hole so that the men could tell just how long to cut the fuse. In lowering this Hubble did not use the proper precaution, letting it down with such force that the big charge was exploded. Fortunately the force of the explosion was mostly in a horizontal direction, sending a great pile of shale into the pit below, where the operators were standing. Hubble was standing directly over the hole and got the most of the effect of the upward vent of the charge in his face and breast, and Mr. Thompson had his face and eyes filled with the dirt and small particles of shale. Standing about six feet from her husband when the terrible accident occurred was the wife of Mr. Hubble, holding in her arms her small child, but they were uninjured save by the flying dirt. She only a few minutes before warned her husband to be careful.

The force of the charge crushed Hubble's face until he was entirely unrecognizable and his breast was terribly lacerated. Assistance was called and the dirt which had partly covered the injured man removed and he was taken to his tent near by, where with his wife and child he was living during the summer. He was unconscious and remained so until his death occurred four hours later. Dr. Barcus was called and dressed the injured man's wounds, but gave out no hope from the first for his recovery.

Jasper Thompson, who was also badly injured, will recover. He was taken to Culver Union Hospital, where his wounds were dressed. His face was so badly cut up by the particles of shale and his left eye seriously injured.

BOTH LEGS OF BRICK MANUFACTURER CRUSHED OFF

Lying at the Knoxville hospital, with both legs amputated above his knees, but doing fairly well under the circumstances, is Mr. Charles Litterer, a well known brick manufacturer of Maryville, Tenn.

Mr. Litterer fell victim to a most painful accident but withal he gave a display of cool nerve that is hard to excel. Mr. Litterer was busy at his plant when in some manner, a portion of his clothing was caught in the cogs of a big brick machine, and before the machine could be stopped both limbs had been ground to pulp in the cogs of the machine.

While pinioned in the machine he lay there and saw one of his limbs crushed between the cogs, up to his knee, and then fell from the machine to the floor. While viewing this sight his other leg was being slowly mashed to pulp.

The machinery having been stopped he coolly directed the workmen who surrounded him, how to extricate him from the machine, a task which in itself required some forty-five minutes.

Preparations were made to rush him to a Knoxville hospital, and although so badly injured he did not lose consciousness but directed his foreman to fill all orders on file as quickly as possible. At Knoxville both limbs were amputated some distance above the knees, and, as stated above, he is on a fair road to recovery.

Mr. Litterer is highly regarded at Maryville, being one of that town's most progressive citizens.

NATIONAL FIREPROOFING CO. SELLS WASHINGTON PROPERTY

An industry of large possibilities is springing into existence in the northern part of the District of Columbia in the manufacture of brick and stone from sand.

The sale of the property of the National Fireproofing company, of Pittsburg, at Terra Cotta, D. C., to S. N. Widdup, has been announced. The property is near the tile and pipe works at Terra Cotta, and the plant of the Pittsburg firm was burned there several months ago. Mr. Widdup is understood to have paid about $100,000 for the property. It has an acreage of thirty-three acres, twelve houses stand on the property, and the plant remaining consists of ten kilns, which will be used in the operations of the future.

A company is being formed to take over the property, Mr. Widdup acting as agent. This company will manufacture the new style sand brick, which are meeting with great favor in many forms of building operation. These brick are made by a comparatively simple process from fine sand into hard, smooth, nearly white brick, which have great resistance to fire and water. One form of the brick to be made is waterproof and all varieties are fireproof, except possibly at the point of fusion for silica.

With the property purchased Mr. Widdup now controls the major part of the large sand bank extending from Terra Cotta to Takoma, a full mile in length, with workable sand at least thirty feet in thickness. The new company will begin operations this year by the improvement of the plant already on the ground, and will enter actively into the manufacture of the brick described, as well as of all forms of artificial stone.

WHITE PRESSED BRICK PLANT SOLD

Frank P. Fleming, as special master at Jacksonville, Fla., sold to J. F. Williams, of Daytona, for $14,325, what is known as the Florida White Pressed Brick Co. plant, about four miles north of the city, to satisfy a mortgage in favor of the Barnett National Bank, and against the Florida White Pressed Brick Company. This is a very valuable property, and it was said that it sold for about one-third its value. It consists of about 22 acres of land in the Sibbald grant, brick molds, three presses, steam boiler, 150-horsepower Corliss engine, 125-horsepower steam feed pump, 150-horsepower, and other brickmaking machinery, and conveniences, such as 120 steel cars, railroad iron, etc.

W. M. Bostwick, attorney for the bank, was the only bidder against Mr. Williams. Mr. Williams declined to say what was his intentions in acquiring the property, but others said the plant would be operated by him at the present location. It has turned out many millions of fine white brick here, as can be seen in numerous buildings at Jacksonville.

ROOFING TILE FACTORY IS TOTALLY DESTROYED BY FIRE

Fire totally destroyed the works of the New York Roofing Tile Company at Malden, near Saugerties, N. Y., entailing a loss of about $40,000 with about insurance of $10,000 to cover it. The president of the company is Lucius Washburn, an Albany lawyer.

The origin of the fire is unknown, although it is believed to have been caused by sparks from the engine of the north bound train on the West Shore railroad, the works being adjacent to the tracks. The fire started immediately after the train had passed.

The loss to the company is serious, as it had several large contracts to fill, among them being three for the United States government. The works in all probability will be rebuilt.

McDONOUGH CLAY PRODUCT COMPANY ORGANIZED WITH MAIN OFFICES AT MACOMB

Macomb, Illinois, is to have another manufacturing company, known as the McDonough Clay Products Co. The main office is to be located there. Not much is known of the company further than it has been in course of construction for some time. Charles J. Swanson of Chicago is one of those interested and will accompany S. B. Downer of Maccomb within a few days to look over conditions.

The company will manufacture articles out of clay. It is understood that they will get their clay from what is known as the Winters' farm, west of the city, now owned by J. H. Rexroat, as it is known that samples of clay from that farm have been tested for some time and have been found to be of a high quality. The company is organized for the manufacture of telegraph and telephone insulators, pressed brick, and the Climax stock guard. This guard is now made in the east, and is taking the place of wood and iron very fast. It is the only stone stock guard made. There is a great demand for it at the present time.

FOXHALL BRICK CO. PLANT DESTROYED BY FIRE

The plant of the Foxhall Brick company, on the River drive, at the extreme south end of Passaic; N. J., was totally destroyed by fire, shortly after 6 o'clock, at a loss estimated at $40,000.

The place had not been in operation for a few days, it being closed to give the machinery an overhauling. Only the day watchman was in the building when the fire started.

The flames were discovered a short distance from the boiler house and before any material assistance could be rendered the entire three floors were ablaze in the rear.

The flames spread so quickly that nothing could be saved. The books, papers and records of the company, and all of the office furniture were consumed.

Passaic firemen were summoned but arrived too late to save any part of the structure. Thomas Foxhall and his father are the principal owners of the business. The concern manufactures a sand lime brick of a special grade.

KANSAS WILL TEST YOUR CLAY

The work now being undertaken to discover the properties and the commercial value of various clays found in Kansas is expected to reveal new and rich resources in the state. The state geologist, Professor Erasmus Haworth, is the one who is directing investigation, by the use of the improved facilities for such work now available at the University of Kansas.

The new mining and geology building at that institution has just been completed. All kinds of physical and chemical tests of the raw clay and of the burned product can be made and a kiln will be prepared especially adapted for firing samples.

Any citizen of Kansas who has clay that he would like to have tested may now secure an expert opinion without other expense than the freight to Lawrence on a hundred pound sample. It is the opinion of many that the raw material for large and profitable industries now lies unknown in many parts of the state and Professor Haworth thinks that it will require two years to complete this survey.

The Empire Pottery on Muirhead Ave., Trenton, N. J., was visited by a $2500 fire, which started in the packing material shed.

SAND OR LIME BRICK OR BLOCK NEWS.

The Sugar Grove (Ohio) Brick Co. has resumed operations at their sand-lime brick plant.

Walter Wyant & Bazelman Bros. have started a cement brick plant at O'Neill, Neb. The plant is at the Bazelman Lumber Yards.

The Grande Brick Co., Grand Rapids, Mich., manufacturers of sand-lime brick is already running to the limit of its capacity.

The Montana Granite Brick Co., Helena, Mont., has just issued a handsome illustrated catalogue describing its plant and the product it manufactures.

The Foxhall Brick Co's. plant at Passaic, N. J., which was being overhauled was damaged by fire to the extent of $40,000. The concern manufactures a high grade sand lime brick.

The plant of the Florida White Pressed Brick Co., near Jacksonville, Fla., has been sold by a special master to J. F. Williams of Daytonia for $14,325, which is about one-third its value.

The Mitchell (S. Dak.) Tile & Cement Works has a force of men at work turning out large quantities of tile and they are being sold as fast as the farmers can take them away.

The Flint (Mich.) Sandstone Brick Co., will add another drying cylinder to increase the capacity—20,000 bricks daily. A new press is also to be installed and a 150 horsepower boiler added.

The Electric Cement Post & Tile Co., of Lake City, Ia., has just closed a contract for twelve miles of cement drain tile for the county. The tile will be from 6 to 24 inches in size and will cost $17,000.

The Sioux Fall (S. Dak.) Pressed Brick Co. which has been under the management of Johnson Bros., has been sold to Nebraska capitalists, who became interested and wanted to own the whole of the stock as a paying investment.

Edinburg, (Ill.) Cement Tile & Brick Co. has been incorporated with $10,000 capital stock to make cement products and building materials. The incorporators are J. R. Harrington, B. A. Turner and G. W. Milligan.

The Basic Lime Products Co. has awarded contracts for a large plant at Kenova, W. Va., to be run by 30 electric motors. The specialty will be the manufacture of hydrated lime both high calcium and magnesium.

The Miracle Cement Block & Brick Co., Muskogee, Okla., has increased its capital stock from $5,000 to $10,000 and will reorganize. The officers are C. T. True, president; Byron Bronson, vice-president; W. H. Pritchett, treasurer; and I. T. Wysong, secretary.

CHICAGO CEMENT SHOW IN FEBRUARY

President Edward H. Hagar of the Cement Products Exhibition company, has announced that the next cement show will he held at the Coliseum February 18 to 26, at which time leading associations identified with the trade will hold conventions. Among those scheduled to convene are the National Association of Cement Users, the American Society of Engineering Contractors, National Builders' Supply Association, Illinois Society of Municipal Contractors, Illinois Lumber Dealers' Association, Illinois Masons' Supply Association and the Interstate Mantel and Tile Dealers' Association of the United States.

PHILADELPHIA ONE OF THE THREE GREAT BRICK MANUFACTURING CENTERS.

Philadelphia is one of the three great brick manufacturing centers of the United States, the others being Chicago and the Hudson river counties of New York.

Although the first brick used in Philadelphia were brought from England, the settlers were not long in discovering that excellent clay beds were at hand. The industry was begun early in the eighteenth century and from that time to the present day the demand for brick has been met almost exclusively by local manufacturers.

And the demand has been a heavy one; brick having always been and continues to be, the most used building material in Philadelphia. To-day the capital invested in the industry amounts to about $2,500,000, while the value of the real estate, building, machinery and tools of the thirty-seven manufacturers is valued at about the same amount.

In the early days the brick yards were located in the very center of the city, but now the clay beds that are being worked are located in the southwestern section of the city, in West Philadelphia and in other outlying districts. The supply of clay is practically inexhaustible.

For more than 150 years the brick manufactured were made by hand. Then some twenty-five years ago machinery was introduced. The industry has since grown by leaps and bounds, keeping pace with a wonderful demand. The latest machines are capable of turning out 40,000 bricks a day.

The average number of houses built a year in Philadelphia is now 7,000. The vast majority of these are of brick yet the contractors have not been forced to go to an outside market for their bricks. The stiff, hard clay found in and about the city is well suited for the manufacture of the common red brick, and to this product the manufacturers have, for the most part, turned their attention, although during the last fifteen years there has been a marked increase in the manufacture of red front and other fancy styles of brick made here. Philadelphia need acknowledge no superior in the manufacture of artistic bricks.

Every year the brick yards turn out more than 206,000,000 common red brick, valued at more than $1,400,000. It is these that are used in making this municipality the greatest city of homes in the world. Some fifteen million ornamental brick are manufactured annually. Few brick are shipped from this port, the home market taking care of the supply.

The vitrified brick, used in the paving of streets, is not manufactured within the city limits, as these brick are not made of clay at all, but of shale, a material not found in any quantity in this country. There are, however number of firms with headquarters in this city that handle these brick, which have proven popular and have been used extensively for paving purposes. Another important branch of the local industry is the manufacture of firebrick, the great number of foundries located in Philadelphia making an excellent market for this product.

Brick manufacturing has won a place well up on the list of the great industries of the city.

Haigh's New System of Continuous Kiln Arranged to Suit all Locations

These Kilns can be seen burning Roofing Tile, Drain Tile. Dry Pressed Facing, Fire, Paving and Common Building Brick

Points of Superiority: Cheapness in construction. Easy to understaud and operate. Perfectly free from any nuisance. Will save more than one-half of the fuel used on other Kilns Specially adapted for Utilizing Waste Heat for Drying Purposes, and which is being done most successfully

Address, H. HAIGH, Catskill, N. Y.

MISCELLANEOUS ITEMS

The Bonner County Brick Co., has been capitalized at $50,000 at Sand Point, Idaho.

The Manteno (Ills.) Brick Co., is now operating its plant. Same will be steady until the middle of December.

The Morton (Ills.) Tile Works are now doing a big business, selling all the tile they can make to the local farmers.

The plant of the S. Barnes Brick Co., Rochester, Pa., which recently burned will be rebuilt at once increasing the capacity.

The Rockport (Ind.) Drain Tile Co., has been incorporated with $50,000 capital stock. Directors are J. A. Long, W. C. Elston and A. P. Rice.

The Model Brick Co., Carrollton, Texas, has been incorporated with $25,000 capital stock by Joe C. Thompson, A. J. Boedfeld and J. C. Siddons.

The Peebles Brick Co., Portsmouth, O., has landed a contract for 2,500,000 paving brick for Cairo, Ills. The brick will be shipped down the Ohio river.

Grant park parties, backed by Mr. Curtis have bought the Eastern Illinois Brick Co's., plant at Beecher, Ills., paying $10,500 for the entire plant at public sale.

The Steelton (Pa.) & Harrisburg Brick Co., is working 175 men at the first-named plant which is taxed to its fullest capacity on account of the burning of the Harrisburg plant which is now being rebuilt.

The Weir Brick Co., Weir City, Kansas, is keeping busy with many orders. They are making a specialty of the natural glazed brick which are impervious and are very popular for building fronts, etc.

By the signing of the contracts for the water main extention by the city of Findlay, O., to the plant of the Hancock Brick & Tile Co. in the south end of the city the long fight by this company for fire protection is ended.

Adam Danford, for many years superintendent of the Reddick Brick & Tile works has accepted a position with the St. Anne (Ills.) Brick & Tile Co., taking the place of A. J. Whitehead, who has become interested in a Michigan plant.

The Columbus Grove (O.) Brick & Tile Co., are rushing the manufacture of tile so as to try to keep up with the orders coming from the farmers within a radius of fifteen miles from the factory. One farmer purchasing twenty-five carloads.

The Draper (Utah) Silica Brick & Clay Co., has been organized with $125,000 capital stock with R. P. Morris as president; D. O. Rideout, vice president; W. Carlson, secretary and H. B. Prout, treasurer. The company takes over several small properties.

The Leon Keeble Brick Co., reported in the last issue will build their plant at Lindale, Texas. The capital stock is $20,000, held by Leon Keeble and W. H. Rivers and Wayland Rivers of Elgin, Texas, the latter two being connected with the Elgin National Bank.

The announcement is made that a large brick factory is to be erected at Lincoln, Placer Co., Cali.

A commission has been issued to the Carolina Clay Co., of Georgetown, S. C. Capital stock $25,000.

The Clark Brick Co., Little Rock, Ark., has begun the delivering of 1,000,000 brick for the State National Bank Bldg.

Miller Bros. & Co., of Mulberry, are now in charge of the Arcadia (Kansas) Brick Co. works and will put same in operation at once.

The Fulton (Mo.) Fire Brick Co., has increased its capital stock from $60,000 to $120,000 and will more than double the capacity of the plant.

Braun Bros., Cassville, Wis., expect to make extensive improvements at their plant so that they can handle the output of their plant with greater dispatch.

The Lexington (Texas) Brick & Tile Co., has been incorporated with $7,500 capital stock. Incorporators are G. P. Dickson, E. Zander, R. F. McGinty and others.

The Big Horn Brick Co., Cody, Wyoming, has just set fires under a kiln of 1,000,000 brick, the product having been in great demand on account of new brick buildings going up.

The Milltown (N. J.) Terra Cotta & Fire Brick Co., has been organized with $100,000 capital stock by F. Klenk, of Long Island City, A. Keith of New York and A. Zeltman, of Milltown.

The Simons Brick Co., of Los Angeles, California, have closed a contract for land at El Centro, in the south eastern part of the city for a site for a brick and tile works which is to be in operation within the next ninety days.

The Blackford Window Glass Co., Vincennes, Ind., has added a clay department and can now furnish German tank blocks, glass melting pots, floaters, rings and clay materials of all kinds. The addition cost $50,000 and is under the management of Frank Bastin, the head of the company.

NOTICE

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All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue W. C.

AMERICAN PROCESS CO.,

68 William St. **NEW YORK CITY**

James Walch is considering the moving of his brick plant to Mounds, Okla.

The Abingdon (Ills.) Paving Brick & Tile Co., are to make improvements to their plant that will cost about $20,000.

J. M. Parkins has moved his family from Humboldt, Kansas, to Muscogee, Okla., where he is engaged in brick-making.

The Oakland (Neb.) Brick Co., is experimenting with some clay taken from near Takamah as to its desirability for tile making.

W. H. Strong, mayor of Brewton, Ala., and owner of the Brewton Brick Works, is building a handsome brick block at Gulfport, Miss.

The Ft. Smith (Ark.) Vitrified Brick Co., has let contracts for 20 down draft round kilns to be built at once. The company now have five square kilns.

The Fairmount (Ind.) Tile Co., have closed down pending the completion of a number of repairs. The recent heavy rains caused damage to one of the kilns.

The Port Credit (Onta.) Brick Works are just completing a $35,000 extension to their brick works and have planned the construction of 12 additional kilns for the spring.

P. W. Hearn, secretary and treasurer of the Lehigh (Ia.) Clay Products Co., has moved to Webster City and taken charge of the Tuscola Supply & Construction Co's. local office.

The Susquehanna Clay Products Co., has been incorporated with $100,000 capital stock. Incorporators are A. Appleton of Darby, Pa., W. Killen, of Philadelphia and E. S. Parsons of Darby, Pa.

The improvements to the Sweetser (Ind) Drain Tile Co., plant are nearly complete. Two substantial brick buildings have been completed as an addition and additional machinery installed. Col. Baum is the manager.

The Tiffany & Pickett Co., of New Haven, Ct., has been incorporated with $75,000 capital stock. Incorporators are D. B. Tiffany, Frederick B. Pickett and A. R. Plumley. They will conduct a coal, lumber and brick business.

The Valleyford (Wash.) Brick & Tile Co., has completed its first seasons run, making 3,000,000 brick. The remainder of the season will be devoted to constructing a dryer and a continuous kiln of 40,000 daily capacity.

The Range Brick Co., Hibbing, Minn., has been incorporated with $100,000 capital stock. Incorporators are C. A. Remington, of Hibbing, H. S. Lord, of Carlton, A. W. Kerridge, J. C. Keis and R. I. Hall, of Minneapolis.

C. H. McNider has purchased the 340 acres of land of the heirs of J. M. Calkins, which is underlain by the same deposits of clay as is used by the Mason City, Iowa, plants. The Farmers' Co-operative Brick & Tile Co., is within a short distance.

The New Jersey Clay Brick Co., has been incorporated with $100,000 capital stock. Incorporators are David McCarthy and Frank Murphy of 105 N. 2nd Street, Philadelphia, and Wm. Gibberson of Florence. The plant is at Florence.

The American Clay Products Co., of Minneapolis, Minn., has been incorporated with $100,000 capital stock. Louis F. Mettelman is president, Fred H. Schriber, vice-president, and Charles R. Parker, secretary and treasurer. We reported this company as being at St. Paul in last issue.

The Diamond Brick Co., has been organized by practical business men in the Valley with $60,000 capital stock and a lease has been secured on the Leuden farm near Buttonwood, Pa. The incorporators are P. H. Kehoe and W. B. Mowery, of Wilkesbarre, William Amesburg, Councilman Daniel H. Evans and John J. Rushno, of Forty Fort and Arthur Root.

A red pressed brick plant has been put in operation at Shoshone, Idaho, with twelve men on the payroll.

Work has begun on the McDade (Texas) Brick Works and in a short time good brick will be placed on the market.

The Atlantic Tiling Co., 15 Exchange Place, Jersey City, N. J., has changed its name to Architectural Tile & Faience Co.

Nephi, Utah, is to have a $40,000 brick making plant. A company has been incorporated with C. F. Hoffman at the head.

The Illinois Fire Proofing Co., has purchased 10 acres of land in Grafton, Ills., for the purpose of establishing a brick plant.

The machinery has arrived for the $35,000 brick plant that is to be built by the Paragon Brick Co., at Sheridan, Wyoming.

The Spencerville (O.) Tile Co., has taken down their old buildings and purchased additional land and are rebuilding their plant.

The Manufacturing Supply Co., manufacturers of brick have located near Wells, Mich. About $20,000 brick are made daily.

The Brick and Tile factory at Flat Rock, Mich., conducted by Bunto Bros., is working night and day to keep up with orders.

Becker & Miller, Bay City, Mich., has bought the Stone Island Brick Co., plant which has been idle for two years and will start same at once.

E. C. and W. R. Stuck has bought the interests of other stockholders in the Jonesboro (Ark.) Brick Co. W. R. Stuck will take charge and the plant will be enlarged.

The Dover Brick & Tile Co., Cleveland, Ohio, has been incorporated by E. H. Arnold, G. B. Sloat, G. W. Arnold, J. H. Brice and F. H. Burnap. Capital stock $40,000.

The sale of the Bartlett Brick Co. plants at Roseton and Hudson, N. Y., has been postponed until Nov. 9th. They are to be sold on the court house steps at Newburgh.

The Aransas Pass Pressed Brick & Shingle Co., Aransas Pass, Texas, has been incorporated with $2500 capital stock by T. C. Whitehead, W. E. Sewell and O. C. McLeod.

The Coffeyville (Kan.) Shale Brick Co., has bought a $9000 steam shovel from the Thew Automatic Shovel Co., and has sold their old and smaller shovel to the Tyro Brick Co.

The Willpicaba Clay Works at Ragland, Ala., is running at full capacity, making paving brick. A continuous kiln is soon to be built that will cost $15,000. C. H. Pittman is the general manager.

The McDonough Clay Products Co., Macomb, Ills., has been organized and will manufacture clay articles from clay taken from the Winters' farm west of the city. Charles J. Swanson of Chicago, is interested.

The Kansas Brick Co., Caney, Kansas, has been organized by S. M. Porter and W. O. Truskett of Caney, Mr. Cochrane, of Topeka, Mr. Wiley of Chanute and Mr. Jewett of Wichita. This is the outgrowth of the old Monarch proposition.

C. H. Crowl and associates of Cherryvale, Kansas, will build a large brick plant at Tulsa, Okla. They will make 125,000 bricks daily and operate the coal mine. Mr. Crowl operates a plant at Cherryvale and is a prominent brick-maker.

At the annual meeting of the stockholders of the Chanute (Kansas) Brick & Tile Co., the following officers were elected: G. W. McFarlance, president, E. P. Bodie, general manager, A. M. Allen, secretary and G. W. Grebe, treasurer. The stockholders were pleased with the years' report and instructed the officers to push the work the coming year.

FOR SALE

One Penfield power Repress in first-class condition, capacity 10,000 per day, used only one month, write for particulars.

American Enameled Brick & Tile Co.
1 Madison Ave., New York City.

WANTED

One good second hand Housing for Stevenson 9 foot dry pan, 2 pieces. Address,

BOX 52.
Hyndman, Pa.

Second-Hand Brick Machinery For Sale

1 two-mold brick press.
1 three-mold brick press.
1 six-mold brick press.
1 42-inch clay pulverizer.
1 Freese stiff-mud auger machine, pug mill and cutter.
1 Centennial auger machine and cutter.
1 clay mixer.
2 small engines.
Let us know your wants.

Scott Manufacturing Company,
1811 Third National Bank Bldg. St. Louis, Mo.

Brick Plant for Sale or Lease

A conveniently located brick plant on the main channel of the James River, 90 miles from Richmond, 18 miles to Newport News, and 40 miles to Norfolk, all having a good steady market for brick. Easy transportation for large boats. Want to see plant in operation. Therefore would make very easy terms. Address MRS. AGNES L. TURNER,
Ferguson's Wharf, James River, Va.

FOR SALE

One No. 9A Brewer Tile Machine with haud Brick and Tile Cutters, Brick Dies and Tile Dies 3½ to 8 in. One 40 horse power Engine.

C. L. FINK,
Bricelyn, Minn.

WANTED

One good copy of the Clay Record, Number 10 Volume 16, to complete files for a ceramic school library. Address ROSS C. PURDY,
Ohio State Uuiversity,
Columbus, Ohio

FOR SALE

Plaus and Rights of Round Down-draft Continuous or Semi-Continuous Kilns. Both types possess new and improved features. Address

William Radford,
Phoebus, Va.

HAMPTON'S KILNS

Burn 99 Percent Hard Brick and Tile

Old kilns easly changed.
Plans aud yard rights cheap.

We Build Kilns and Guarantee Them

PITTSBURG KILN CONSTRUCTION CO.
618 14th St., N. E. Washington, D C.

DRY PRESS FOR SALE

We have for sale one American four mold dry press, as good as new. A bargain if sold at once.

Des Moines Clay Mfg. Co.
Des Moines, Ia.

BRICK PLANT FOR SALE

Well known and good market in the city of Minneapolis. Plant is running at present. Will sell equipment and yard including horses. If deal is made quick owner can make brick this fall for spring trade. Address

Minnesota, care Clay Record,
Chicago, Ill.

POSITION WANTED

Sand-lime brick manufacturer, 15 years experience, highest references, wants position as Manager or Superintendent of a sand-lime brick plant. Capable to build a plant, to run it and to make it pay. If you cannot make money now call upon me.

Address "SAND-LIME,"
Care of Clay Record, Chicago. Ill.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

CLAY FOR SALE

Tell us what kind of Clay is wanted; we may have it in our line.

Industrial Commission, Soo Ry.,
Minneapolis, Minn.

FOR SALE

The Entire Plant of The Powhatan Clay Mfg. Co.

Operating continuosly since 1893 at Clayville, Virginia, manufacturing the universally known Powhatan Front Bricks. The entire plant empracing 800 acres of land, employees' buildings, store, good will, etc , is offered at advantageous terms. Address,

14 North 7th St., Richmond, Va.

WANTED

A practical brick and tile man to take the management of a brick and tile plant and invest some money. No tile plant within 100 miles Cannot supply the demand. Everything up-to-date in machinery, dryers, kilns, etc. Located in Michigan. Adddress "MICHIGAN" Care of Clay Record,
Chicago, Ill.

FOR SALE CHEAP

Four Mold Ross-Keller Brick Press in good working condition. CHISHOLM, BOYD & WHITE CO.,
57th & Wallace Sts., Chicago, Ill.

FOR SALE

Two second hand American Clay Machinery Co. No. 2 Automatic Cutters.
One Western Wheel Scraper Co. No. 2 Jaw Crusher.

Hydraulic Press Brick Co.,
Brazil Branch,
Brazil, Ind.

DRYER CARS

We have on hand a lot of secoud hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, Ohio

FOR SALE

A brick and tile plant in Green County, Iowa. Cannot supply the demand. All new machinery. Good reasou for selling. Write for particulars to GREEN, Care of Clay Record
Chicago, Ill.

WANTED

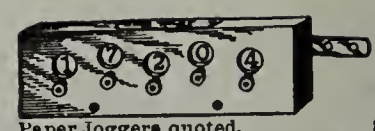
A young or middle aged man, of habits, strictly good, honest and reliable, one who is experienced in the manufacture of clay products and also able to handle correspondence pertaining thereto, and the use of machinery for the manufacture thereof, for position in sales department of reliable machinery manufacturer. In reply to this advertisement state salary that would be expected and give several references as to ability and character. Address.

Sales Dept. Care of Clay Record,
Chicago, Ill.

LOCATION OR PLANT WANTED

I am looking for a location or preferably a plant partially or ready to run for making clay products; such as drain tile builders and pavers, in fact a good shale and fire clay proposition, preferably in Indiana or Illinois, on good road or roads Will buy a managing and sales managing interest or all if conditions are right. Address

"LOCATION" Care of Clay Record,
Chicago, Ill.



No better made, cut from $8 and $10, to
4 Wheel, $3.00
5 Wheel, $3.25
Guaranteed.
Sold by all dealers

Paper Joggers quoted.
R. A. HART, 41 White St., BATTLE CREEK, MICH

GOOD OPENING FOR CAPITAL AND EXPERIENCE

For the purpose of making enlargements would like to interest capital in clay plant, have dry press and stiff mud outfits, making fire brick, face brick, hollow building tile, fire proofing and common brick. Located in the west and have a great advantage in freight rates over a good market on fire brick, fancy face brick, tile etc. Have immense deposits of high- grade fire clay, several varieties of shale and unlimited quantities of good surface clay. Would prefer to interest parties practical in clay working and will offer good inducements.

A. N. M , Care of Clay Record.
Chicago, Ill.

BRICK YARD FOR SALE

I have a nice little Brick and Tile Plant that supplies a local trade of 500,000 to 800 000 Brick and 100,000 Tile, 7 acres of fine red burning clay. New 6 room dwelling, new 40 H. P. Engine, 65 H. P. Boiler, Frost make. Frost Dry Pan, Brewer Mill, Automatic cutter, Hoisting drum, Steel track, everything in first-class running condition. No debt. Sheds and Buildings newly roofed. 2 good down draft kilns, Stiff mud pallets for 100,000 brick, premises newly fenced with "American Field," Good pasture and fine for truck, right in town. $12,000 would scarcely replace it. Will take $4,900 cash; $2,000 down, time on rest. Would consider an exchange for small well improved property at its low cash value. If this looks right to you come and see it, no time to fool away in correspondence.

C. A. ZANDER,
Rushville, Ill.

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick.

Address,
FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio

Address A. B. care Clay Record.
Chicago, Ill.

FOR SALE

One Form Mold Berg Dry Press. good as new. Made about 200,000 brick. Guarenteed in good working order. Address

BUCKEYE FIRE BRICK & CLAY CO ,
Scioto Furnace, Ohio.

FOR SALE

Brick Yard within easy hauling distance of Chicago. 13 acres, well equipped plant. Would lease or make good proposition to man to make investment and run the plant. Address

FRANCIS LASLOW,
79 Walnut St., Oshkosh, Wis.

FOR SALE

New Sand Lime Brick Hardening Cylinder, 6 feet diameter by 68 feet long. One removable head. Immediate shipment.

FRANKLIN BOILER WORKS CO.,
Troy, N. Y

PLANT FOR SALE

Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capacity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7.00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles. Cheap fuel and labor; can operate with steam dryer year around. Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments

W. L. JONES,
Lock Box 5, Williamsburg, Va.

ANOTHER

American Triumph

The American Eagle Gets the Pole

All honor to a standard among Nations and a world-wide standard of machinery excellence

While Peary stops to argue and Cook stoops to cajole,
The Eagle keeps on pressing brick to pave clear to the pole.

The American Eagle has Won the race to the North Pole!

THE AMERICAN EAGLE WINS THE POLE IN EVERY RACE BE-cause its superiority places it easily in the lead, and brings it in a winner in every contest. There is no Eagle like the American Eagle; there is no repress like the American Eagle Repress. It leads the world in ambition and achievement. It has a larger record of victories than all others because it has been groomed and trained to win and has the staying quality back of it.

There are more Eagle Represses in operation today than there are all other Represses. Were all the Eagle Represses, now in operation, set to work making pavers, they would in a single season make enough brick to pave a roadway from the United States to the North Pole, and it would be a good roadway too, because no repressed brick is superior to the brick made on the Eagle.

The Eagle Always Wins!

If you are interested in the best repressed brick possible and the best possible press to make them on, you should know all about the Eagle. We will send you a full description for the asking Our big catalogue tells all about our long line of machinery for making every class of clay products by every known process. We make all this machinery in our own plants and can guarantee every quality to be equal to that of the Eagle Repress. If you are interested in a quality that will make repair bills the exception instead of the rule, you can save money by installing the "Built Right, Run Right" line of Clay Working Machinery.

We build every machine and every appliance for making every class of clay products by every process. We can meet the exact needs of every clay worker without prejudice. If you have a clay problem we can solve it for you. Correspondence solicited.

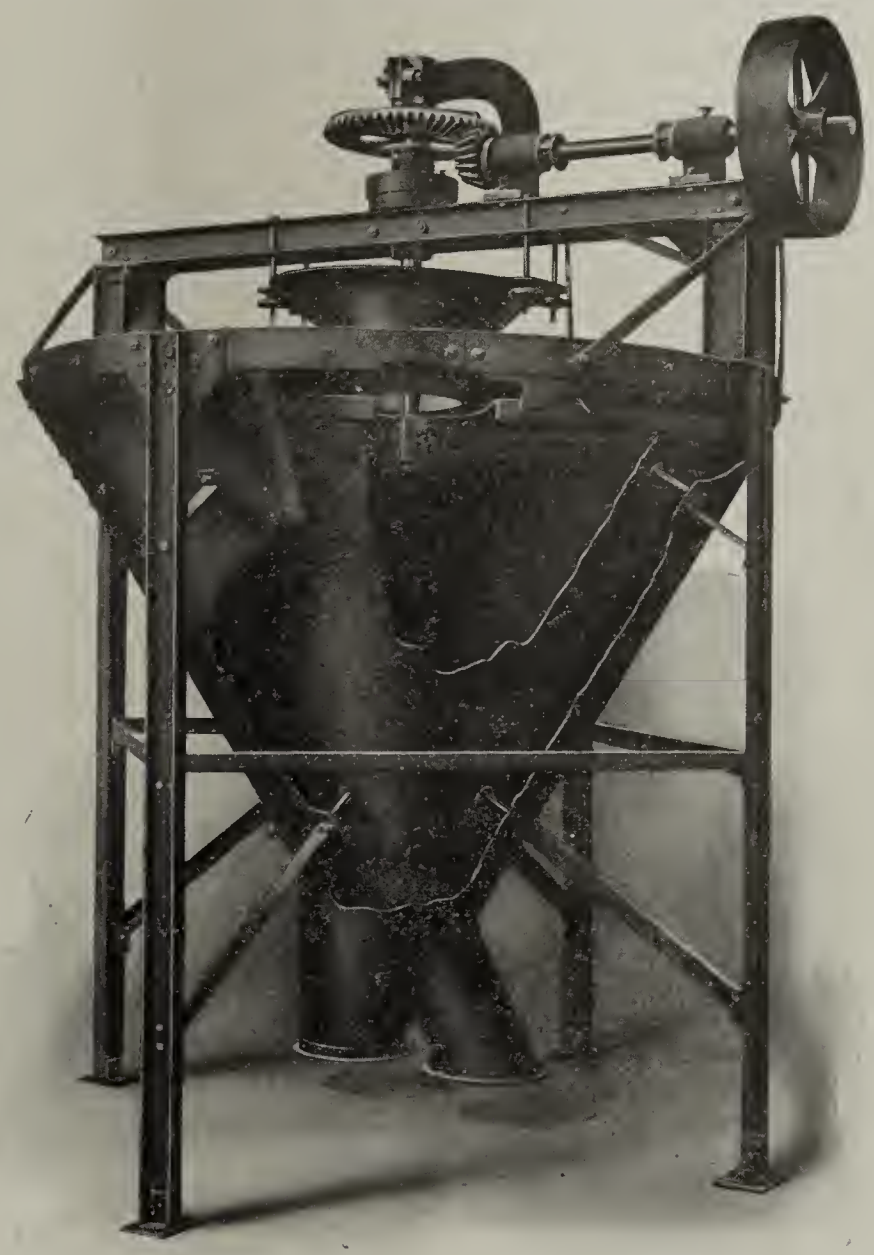
The American Clay Machinery Company

Bucyrus, Ohio, U. S. A.

Centrifugal Clay Screen

IN OUR NEW CENTRIFUGAL CLAY SCREEN WE HAVE A RADICAL DEPARTure in Clay Screens. The motion is centrifugal instead of vibratory. The life of the machine is thus lengthened and the capacity increased. As the cut shows the screen is made up of two hoppers substantially mounted on a steel frame. The screen plate is circular with large screening surface. It is supported by spiders in a horizontal position. The spiders are keyed to the vertical shaft which is connected to the driving shaft by a pair of bevel gears.

Just beneath the screen plate is a steam coil heater arranged to heat the screen plate to prevent damp clay from clogging perforations in the plate.



Surrounding the vertical shaft is a cast iron hopper or spout through which the clay is fed on the screen plate. This hopper can be raised or lowered to regulate the flow of clay on the screen. The hopper being always full of clay keeps an even flow to the screen. The screen as it revoles throws the clay from the center to the outside of the screen plate, the flow being even and regular. The larger particles of clay, too large to pass through the perforations, pass over the screen plate to the outside and fall through the outer housing to a spout conveying them to the grinding pan for regrinding. The fine particles of clay sift through the screen plate into the inner housings or hopper and pass to a conveyor and into a clay bin.

The whole operation is rapid and thorough and the principle insures great capacity and freedom from troubles. Many of these screens have been installed and are giving universal satisfaction.

In actual operation the No. 147 Screen, which has a screen plate six feet in diameter, is screening equal to the capacity of two nine-foot dry pans. We also build this screen with a four-foot screen which will handle clay to the capacity of one pan. Full particulars as to construction and operation of this screen will be sent upon request

We build every machine and appliance required for the manufacture of every class of clay products by all processes. We are much the largest manufacturers of Clay Working Machinery in the world. Manufacturing as we do every machine and appliance right in our own factories we are better prepared to serve you at a saving in time and money than are others.

Built Right Run Right

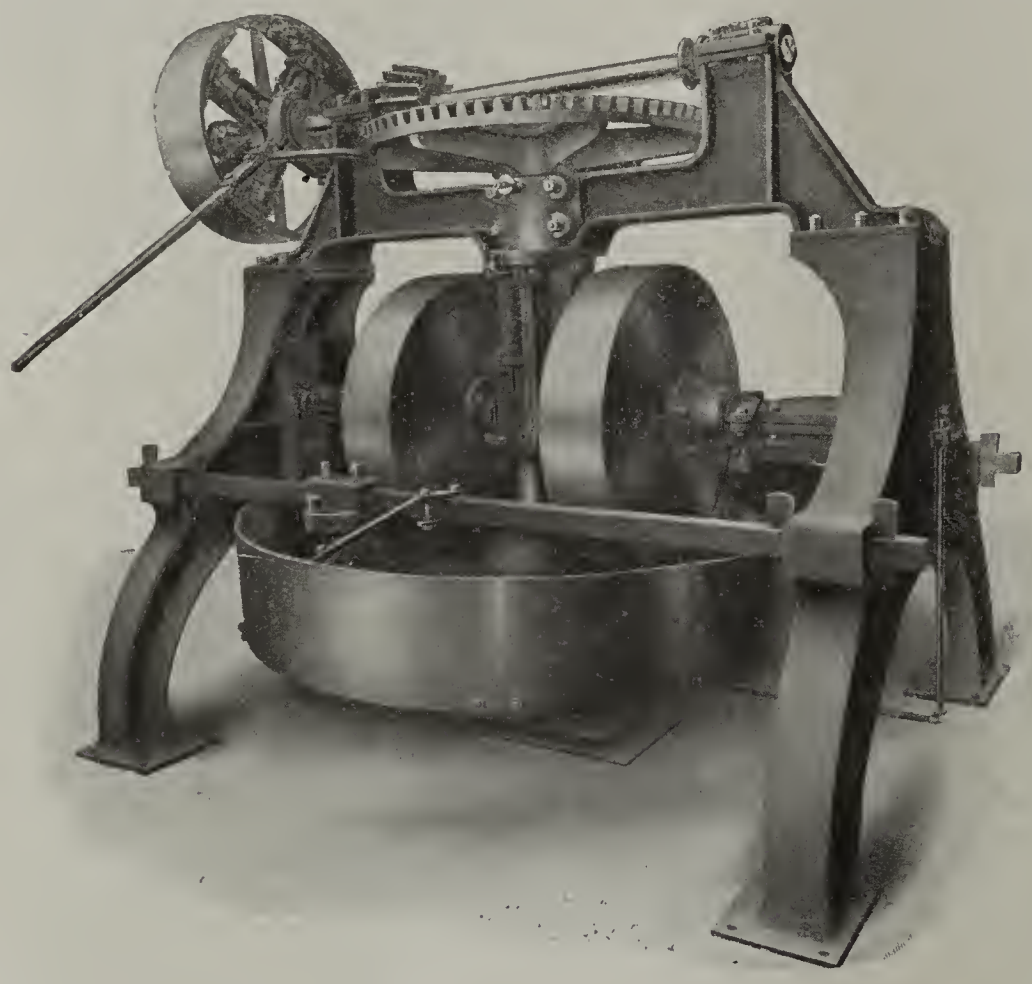
The American Clay Machinery Company

Bucyrus, Ohio, U. S. A.

Built Right Run Right

Wet and Dry Pans

TO THE EXACTING BUYER OF DRY AND WET PANS OUR LINE APPEALS strongly because of the superiority of design and excellence of material and workmanship all of which are features which are of the greatest importance in the permanent satisfactory operation of pans. The capacity of a pan depends largely upon its design and construction, and the distinctive features embodied in our line of pans have given them a greater capacity than others and have insured more working hours per pan with fewer delays and repairs than can be had from other styles of pans. We have been generous in the design of each pan our lines being the heaviest on the market. This feature should be given special consideration as a lighter weight pan is necessarily much cheaper and should not be compared with our heavy, durable and efficient machines



The heavy side frames are substantially tied together at the top by the cross beam, in the center by tie bars and also on the floor line. The shafting is large and of steel. The gears are of special design and excellent quality. The bearings are long and well babitted. The mullers are heavy, adjustable and removable. The screen plates are made of special iron. The step is of our approved type and the complete pan is one that can be depended upon under more than ordinary circumstances. All joints are carefully machined and fitted and bolts are made secure by lock-nuts. The vertical shaft and muller shafts are secured by large removable bearings, which make it possible to remove any of these shaftsor the mullers without disturbing the balance of the pan. The gearing is kept to its full efficiency by our device for taking up any possible wear, which insures a perfect mesh of teeth at all times.

For preparing successfully many kinds of fire clay, shale and slate used for paving brick, and for grinding burnt brick or pipe for grout, etc., dry or wet pans are a necessity. The wet pans are particularly adapted for handling material in moist condition, while for use in dry pans it should be practically dry, so that when ground, it will readily pass through the screen plate without clogging

Write for particulars on our "Divided Screen Plate" which will make a big saving of screen plates. There in no machine required for the manufacture of any clay product which we do not build. Each machine is superior in it's class and of our standard quality.

Built Right Run Right

The American Clay Machinery Company

Bucyrus, Ohio, U. S. A.

Built Right Run Right

THE BOSS SYSTEM OF BURNING BRICK

Involves the ORIGINAL PRINCIPLE of applying AIR UNDER PRESSURE.

WRITE FOR CATALOG

Applies to Any Style of Kiln.

Absolute Control of Heat in Kiln.

40% Reduction in Fuel Cost.

Burns All First-Class Hard Brick

JOHN C. BOSS OFFICE: MONGER BLDG. **Elkhart, Indiana**

Do Your Brick Turn White?

HERE IS THE REMEDY.

PRECIPITATED

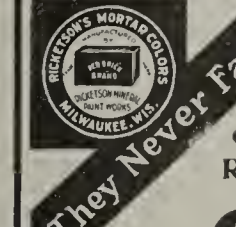
Carbonate (K.B. C.F.H.) **of Barytes**

The only preventative for scum and discoloration on facing Brick and Terra Cotta; neutralizing the Sulphate of Lime in the Clay and Water.

Circulars and Particulars on Application.

GABRIEL & SCHALL

205 Pearl Street NEW YORK P. O. Box 1712



They Never Fade

Twenty long years of time and weather have tried out Ricketson's Famous Red Brick" Brand

..COLOR..

for Mortar, Brick, Cement, Stone, etc., Proves it Absolutely Permanent. Red, Brown, Buff, Purple, Black.

RICKETSON MINERAL PAINT WORKS

MILWAUKEE, WISCONSIN.

C. K. WILLIAMS & CO.

EASTON, PA.

BRICK AND MORTAR

COLORING

Send for full descriptive Circulars

New CLAY FEEDERS and MIXERS for Brick, Tile and all Clay Working Plants

Saves the labor of from 1 to 2 men in every factory, besides mixing and feeding the clay evenly to the disintegrator

One of the many testimonials we have received from users of these Feeders

SUMMITVILLE DRAIN TILE COMPANY

Manufacturers of **Porous Drain Tile**

Harry L. Erlewine, Secy. and Treas.,
Marion Machine, Foundry and Supply Co., Marion, Indiana

Dear Sir:

Acknowledging your favor of the 21st inst., will state that the type "C" Feeder which we have installed in our plant here is "making good" in every way and is all you claim for it.

Since installing the Feeder we have been able to get along with two men less, thereby reducing our weekly pay-roll $20.00 and at the same time have increased our output 10% decreased our power 10%, and as our capacity is 1200 cars per year, you can easily see the great advantage we have since installing the Feeder and Mixer.

All this saving is effected because of the even, steady feeding of the clay to our disintegrator. We have our tracks elevated about 9 feet above your Feeder and Mixer, and we are enabled to dump about 25 car loads of clay in our storage bin over the Feeder, and the Feeder takes care of all this clay without any further attention on our part.

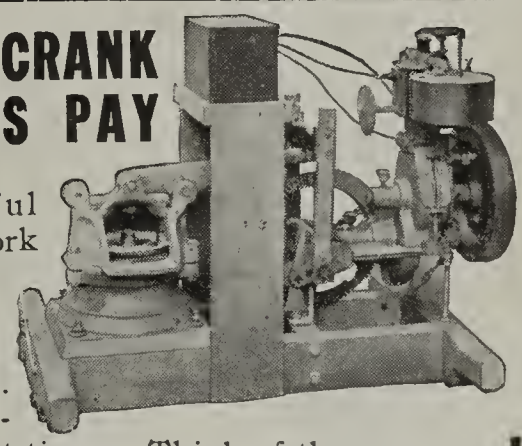
We feel that this is one of the most valuable machines we have in our plant and no one who has ever tried one of your Clay Feeders would go back to the old way. Thanking you for the courtesies shown, we remain

Very truly yours,

SUMMITVILLE DRAIN TILE CO., Per JAMES F. MORRIS, Vice-Pres.

MARION MACHINE, FOUNDRY and SUPPLY CO., Marion, Ind.

A TURN OF THE CRANK SAVES 2 MEN'S PAY



THIS wonderful pump does the work of two men, at a small fraction of their wages, and without argument.

It will pay for itself in a very short time. Think of the saving in dollars and cents, the saving in time, the gain in efficiency.

No contractor or engineer who has any quantity of water to contend with can efford to be wiihout the marvelous

Fuller & Johnson

Bilge Pump Engine

It doesn't need to be urged to do its best — it can't do anything else.

It is built with the same care and attention to details, the same thoroughness and honesty, as all Fuller & Johnson Engines.

It's always ready, day or night at a touch.

Each day you're without it you're throwing good money away.

Send for our Bulletin and see for yourself. (21)

Fuller & Johnson Mfg. Co.

Established 1840

458 2nd Street, - Madison, Wis.

Fire Brick——Fire Clay

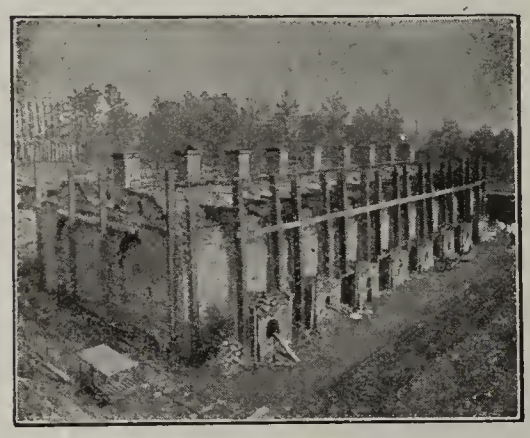
AND FIRE CLAY PRODUCTS

Manufactured out of highest grade Missouri semi-flint fire clay.
A large stock of Number One brick and shapes always on hand.
Let us quote you prices and we will save you money.
Samples sent upon request. Address

Mexico Brick & Fire Clay Co.

MEXICO, MISSOURI

Something New In Brick Kilns and Dryers



The Dennis Double Chamber Up and Down Draft Brick Kilns and Direct Heat and Hot Air Brick Dryers show many new features that make them superior to all others. Economical, durable and strong in construction and operation, having many points of dvantage that appeal to practical brickmakers. Patented April 14, 1903 and September 8, 1903. Brick plants installed and put in operation. Write for booklet. Correspondence solicited.

F. W. DENNIS,
145 Water St., Norfolk, Va.

Approved and Labeled

Fire! Fire!! Fire!!!

Extinguishers

Protect your Home, Business, Factory

Insurance Reduced. Child can Operate.
Made of Copper. Will Last a Lifetime.

Chemical charges can be procured at any drug store

Write today; don't wait; delays are dangerous.

O. J. Childs Company

Sole Manufacturers — Utica, N. Y.

AMERICAN RING-HAMMER PULVERIZER

Two Models, one for Clay, Shale, one for Rock

Will pulverize from 4 mesh to 200 mesh, 1 to 50 tons per hour, according to size of machine, fineness required, kind and condition of material.

30% to 60% less 3peed, and 25% to 50% less power, due to the RING and its utilization of CENTRIFUGAL FORCE.

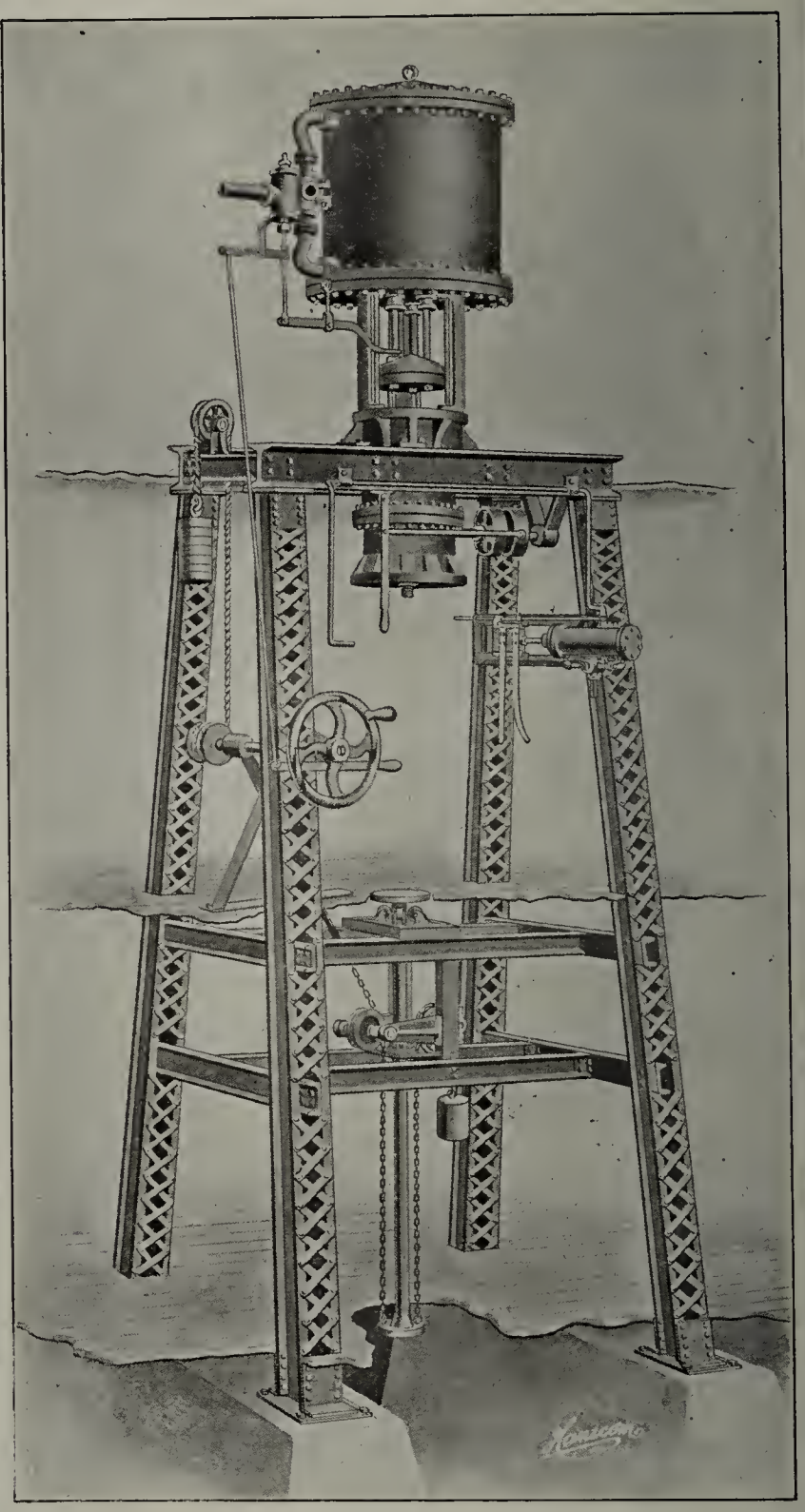
We make six sizes and every machine guaranteed to do the work which it is contracted to do when sold.

Revolving Screens Air Separators
Ask for Circulars and Information

AMERICAN PULVERIZER CO.

Suite 410 Jaccard Bldg., ST. LOUIS, MO.

DISTRICT SALES OFFICES:
F. C. Willis, 36 LaSalle St., Chicago, Ill.
I. R. Coles & Co., 39 Cortland St., New York City.
Lindrooth, Shubart & Co., Boston Bldg., Denver, Colo.



44 X 20 SEWER PIPE PRESS

SEWER-PIPE MACHINERY

COMPLETE EQUIPMENT

THE TURNER, VAUGHN & TAYLOR COMPANY

CUYAHOGA FALLS, O.

REBUILT ENGINES AND BOILERS

The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

ENGINES—Automatic—16x32 Buckeye, 15x14 Erie, 14¼x16 Buckeye, 14½x14 Ball & Wood, 13½x15 Taylor, 13x16 Erie, 12x14 Green, 12x12 N. Y. Safety, 10x10 Fisher, 9½x12 Leffel, 8x10 Allfree, etc.

ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

BOILERS—Stationary—72x18 High Pressure, 72x18 Standard, 72x16, 66x16, 60x20, 60x16, 54x16, 54x14, 54x12, 48x16, 48x14, 44x14, 40x12, 40x9, 36x16, 36x10, etc.

BOILERS—Fire Box—80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 h. p., etc.

BOILERS—Vertical—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 3 h. p., etc.

HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

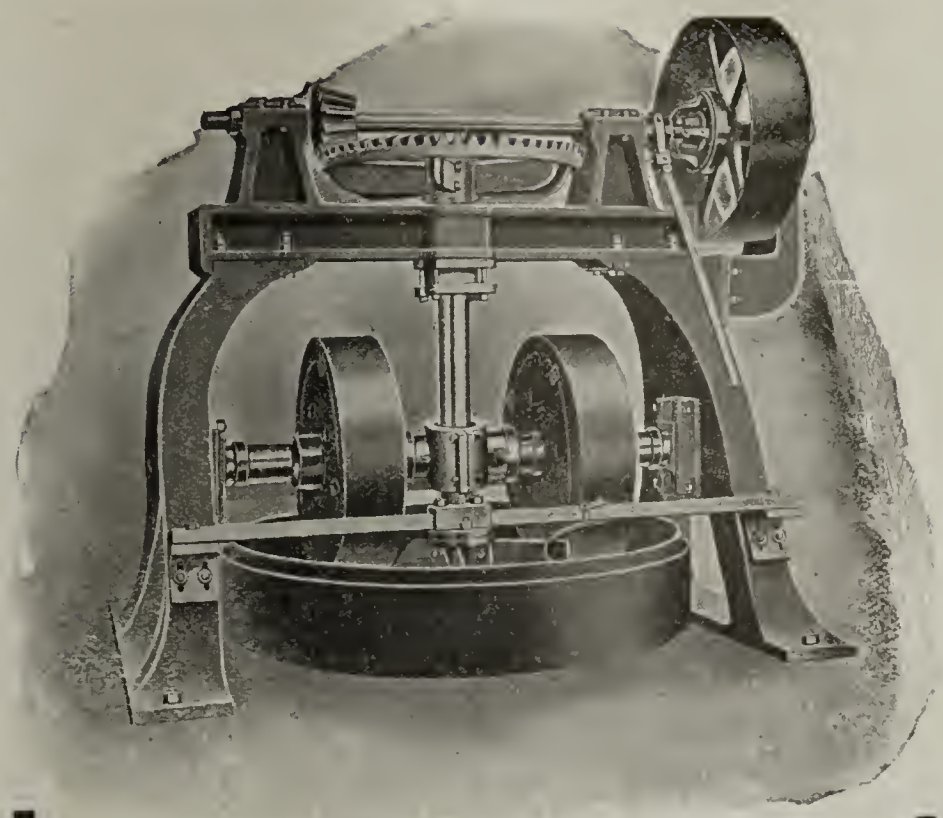
Saw Mills, Lath Mills, Edgers, Cut-Off Saws, Tanks, etc. Write for list.

Also full assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

The Randle Machinery Co.

1732 Powers Street **Cincinnati, Ohio**



PHILLIPS & McLAREN CO. PITTSBURG, PA.

BUILDERS OF

Pittsburgh Standard Dry and Wet, Revolving and Stationary Grinding Pans for Brick, Cement, Sand, Terra Cotta and all kinds of Refractory Materials.

ROCK AND ORE CRUSHERS

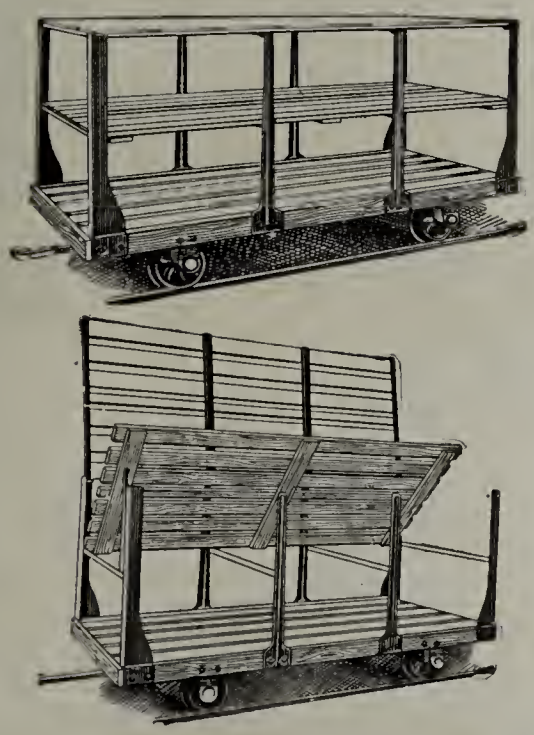
When writing for prices state kind of material and capacity required.

Eastern Offices

Stephen Girard Building, Philadelphia, Pa.

The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices



Vulcan Iron Works MASON CITY, IOWA

"A CHANGE IN FLUES MAKES THE DIFFERENCE IN DRYERS"

POTOMAC BRICK COMPANY

1413-G Street, N. W.

ELLIOTT S. MORSE, Gen. Mgr.

Washington, D. C., March 19, 1909.

THE KING ENGINEERING CO.,
Richmond Va.

Gentlemen:—Our No. 1 10-tunnel Sharer Radiated heat dryer before it was remodeled by you gave us an average of 55 cars per day of dry brick.

You completed the reconstruction of this dryer the latter part of January last. This day we have examined our records and find that our daily average now is 80 cars dry brick.

Yours very truly,

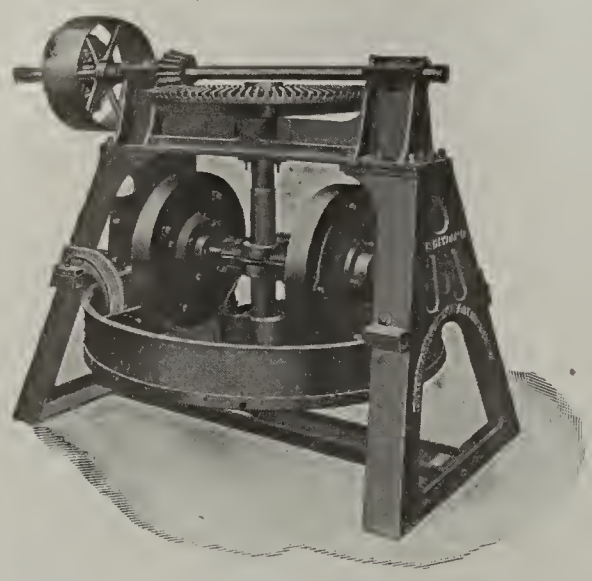
(Copy) ELLIOTT S. MORSE.

That which we have done for the above Company we can do for You. We can remodel any Radiated heat dryer and increase its capacity from 15 to 30 per cent.

THE KING ENGINEERING COMPANY

RICHMOND, VA.

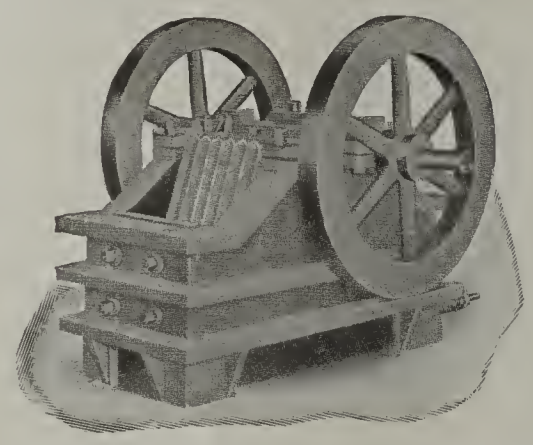
THE HAYDEN DRY PAN.



Masssive and well proportioned.
Best material.
Time tried and reliable.
Large capacity.
Acurate mechanism.
Independent or yoked mullers.

Send for specifications and prices before buying.

THE HAYDEN CLAY CRUSHER



This Crusher is specially designed and adapted for use as an auxiliary to the dry pan.
Capacity 10 to 30 tons per hour.
Simply constructed and the strongest machine of the kind on the market.

Send for circular and prices.

THE HAYDEN
BRICK TESTING RATTLER

For testing paving brick.
Built to the standard specifications of the N. B. M. A.
Best material and workmanship.

Send for descriptive matter.

The P. HAYDEN S. H. CO., Foundry and Machine Dept.

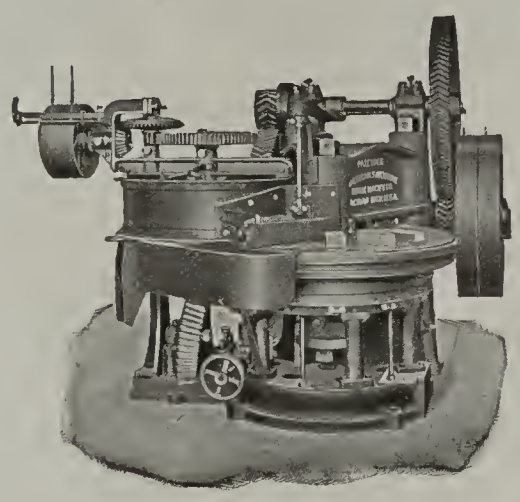
Manufacturers of

WET AND DRY PANS, CLAY CRUSHERS, STEAM CLAY PRESSES, RATTLERS, BRICK CARS, CARWHEELS, AXLES, KILN BANDS, etc.

112 West Broad Street **COLUMBUS, OHIO**

The American Sandstone Brick Machinery Co.

INCORPORATED APRIL, 1902
SAGINAW W. S., MICH.



Improved Saginaw Rotary Presses

Are now being built with extra table for making fancy brick, on which double pressure is exerted.

Don't confuse our Practical System with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant, starting and operating at our expense until at least 100,000 brick are made before asking for a settlement.

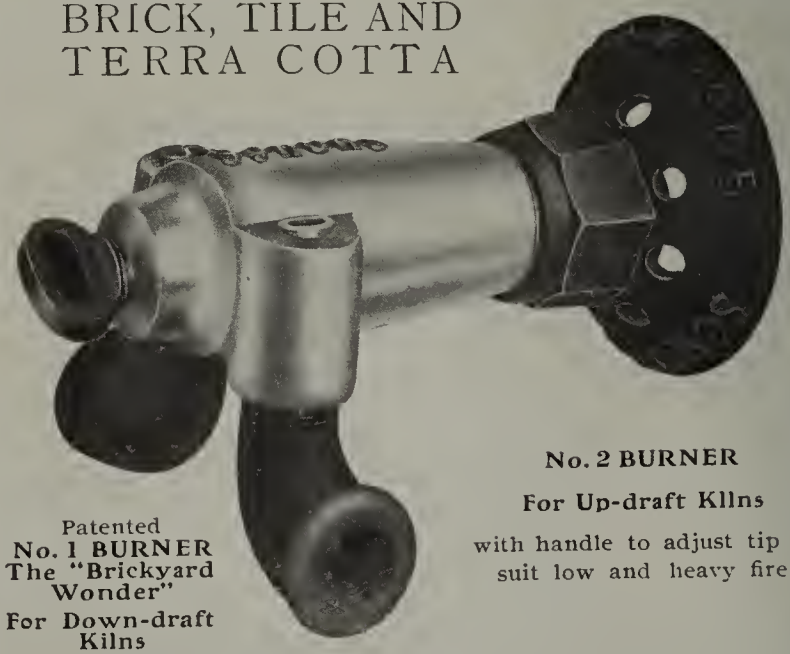
Our plants are **installed under the supervision of Practical Engineers who know how Sand-Lime Brick should be and can be made.** We have **Practical Plants Running Successfully** to show to prospective investors.

WE ARE NOT SCIENTISTS

We **Produce Results**, because we are the **Oldest Practical Sand-Lime Engineering Company Doing Business in the United States**, and we defy contradiction.

SCHURS Perfected Oil Burners

MOST ECONOMICAL BURNERS ON THE MARKET. DESIGNED ESPECIALLY FOR BURNING BRICK, TILE AND TERRA COTTA



ADJUSTABLE TIP

Patented
No. 1 BURNER
The "Brickyard Wonder"
For Down-draft Kilns

No. 2 BURNER
For Up-draft Kilns
with handle to adjust tip to suit low and heavy fire

Not an experiment, but a severely tested, well proved burner whose superiority to all others has been amply demonstrated.

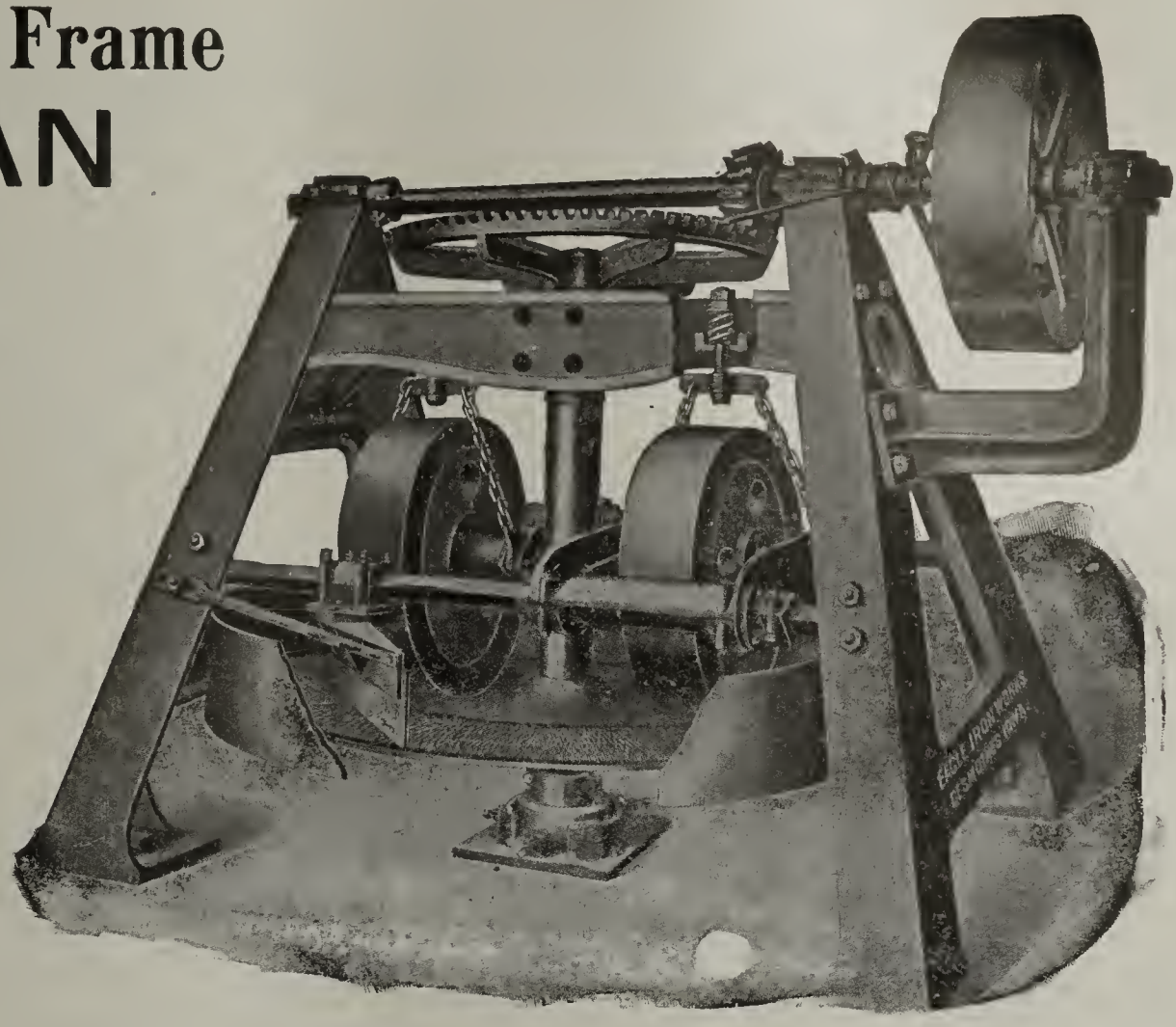
Write for Booklet containing full information.

JOHN SCHURS, Patentee and Manufacturer
1007 NORTH MAIN STREET LOS ANGELES, CAL.

Nine Foot Iron Frame
DRY PAN

With Independent
and Suspended

MULLERS



A well-tried and
proven Success.

EAGLE IRON WORKS, BUILDERS, DES MOINES, IOWA

Steel Brick Pallets

Built Right,

Price Right,

Write Us

STYLE No. 4.

The only Steel Bench Pallet that can be stacked without slipping. They Interlock. Light, Strong, Rigid. (Patented.)

ALL STYLES

MADE EXCLUSIVELY BY

THE OHIO GALVANIZING & MANUFACTURING CO.

NILES, OHIO

PAUL FUCHS

Manager of the Excelsior Granite Brick Co. -:- Specialist for the Sand-Lime Brick Industry

Inventor of a New Process for Making "GRANITE BRICK"

My system enables the manufacturer to turn out a sand-lime brick of a compression strength of 9,000 pounds per square inch from proper raw materials. Send in a one-pound fair average sample of your sand and a one-pound sample of your lime for examination.

Porcelain Enamel for Clay Brick

Forward, express charges prepaid, ten brick for testing purposes.

Special Enamel for Sand-Lime Brick

Send in as many brick as colors wanted and specify colors desired.

1747 CARMEN AVE. Chicago, U.S.A.

HANDLE YOUR CLAY WITH ONE MAN AND

The Thew Steam Shovels

Made in Four Sizes. Mounted on Car Wheels or Traction Wheels.

Type No. 0 Shovel—Ohio Brick Co., Toledo, O.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adjusted to cut to any desired level.

: : Ouly One Operator Required.
Wire Cables used Instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickyards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

Write us for Catalogues and Information.

THE THEW AUTOMATIC SHOVEL CO.

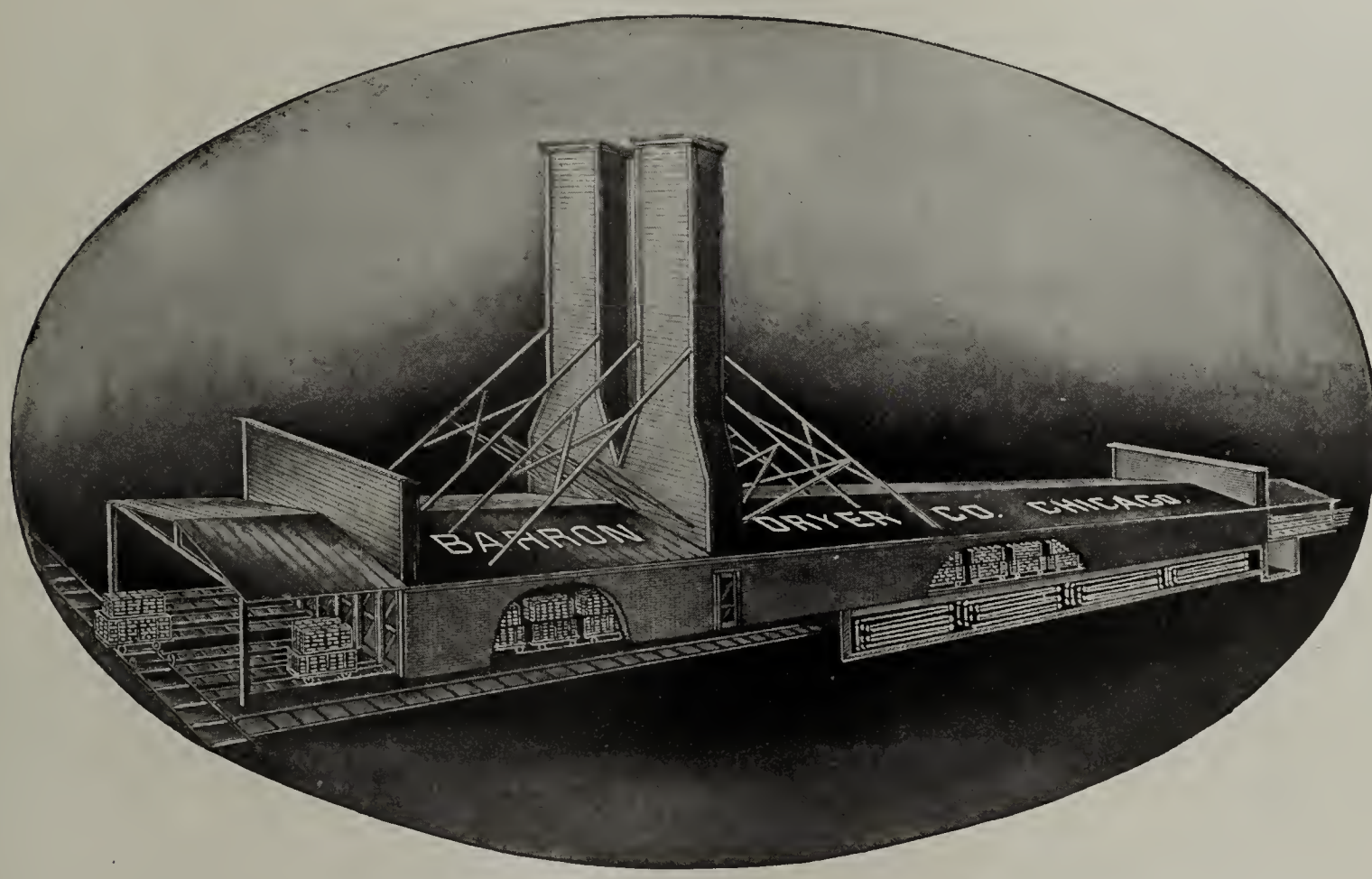
LORAIN, OHIO

BARRON DRYER COMPANY

Established 1879

MANUFACTURERS, PATENTEES and BUILDERS of the

CHICAGO IRON CLAD DRYERS
BARRON'S TENDER CLAY DRYERS



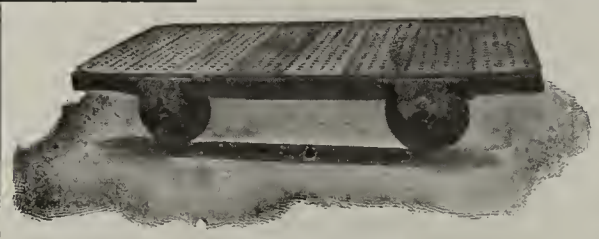
CARS, WHEELS, AXLES, DECKS, TURNTABLES
CASTINGS, FORGINGS, PIPE, VALVES, FITTINGS
RAILS, SPLICES, SPIKE, STRUCTURAL MATERIAL

OFFICE AND SHOPS 1335 SLOAN STREET ON C. & N. W. RY. CHICAGO

THE "MARTIN" CLAY-WORKING MACHINERY

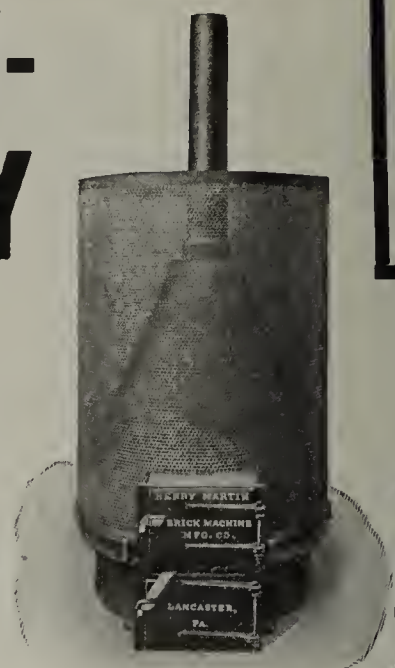
IS KNOWN THE WORLD OVER FOR

ITS SIMPLICITY DURABILITY AND COMPLETE SATISFACTION THROUGHOUT



DRYER CARS

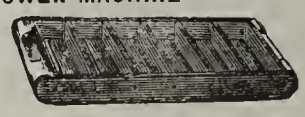
TRUCKS



MODEL SAND DRYER

WE GUARANTEE OUR MACHINERY

HORSE POWER MACHINE



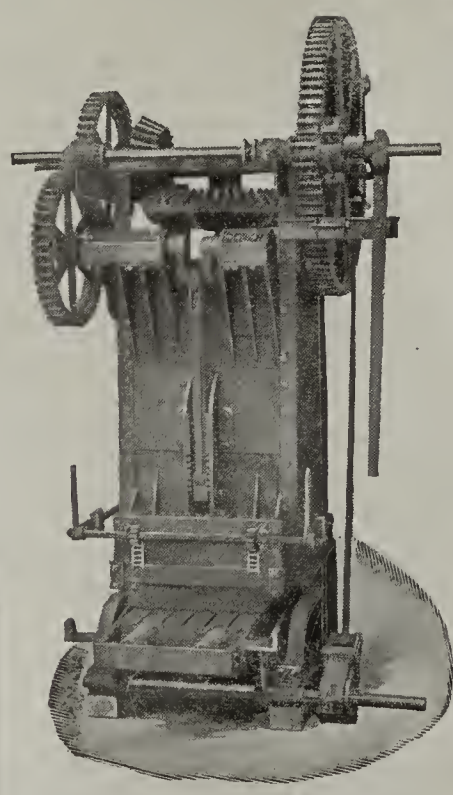
BRICK MOULDS THAT ARE BUILT FOR HARD USAGE IS THE "MARTIN." TRY A SET

YARD SUPPLIES

OF ALL KINDS BUILT RIGHT

TRUCKS

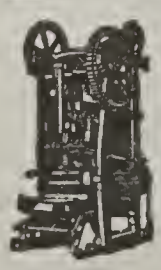
WE BUILD DRY OR WET PANS 5-7 OR 9-FT. WRITE US.



STYLE "P" BRICK MACHINE

"WE FURNISH EVERYTHING THE BRICK-MAKER NEEDS"

STYLE "P" CRUSHER



MARTIN

CLAY-WORKING ENGINEERS & MACHINERY EXPERTS

LANCASTER, PENNA., U. S. A.

THE "MARTIN" STEAM BRICK "DRYING SYSTEM"

PATENTED February, 22d, 1898, No. 599509
October 10, 1905, No. 95520
November 14, 1905, No. 804489
May 26, 1908. No. 888831

This Dryer, and the design in arranging it, are under the protection of the United States Government by virtue of patents granted. Patents have also been taken out in all the principal foreign countries. We are the sole owners and control these important patents and have authorized NO ONE to manufacture or sell the "MARTIN"

RACK PIPE STEAM BRICK DRYERS

YOUR BRICK DRY OVER NIGHT

LABOR SAVING THROUGHOUT

ADAPTED FOR SOFT-MUD OR STIFF-MUD BRICK

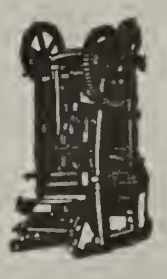
SUPERIOR IN EVERY RESPECT TO ANY OTHER SYSTEM—Labor Saving Throughout. Dispenses with Truckers and car Pushers. Pallets Automatically Return to Brick Machine. Quick to install and low in price, and takes up very little Yard room.

The sale and construction of the "Martin" Rack Pipe Steam Brick Dryer is under the direct supervision of the Factory Office at Lancaster, Pa.

FOR FURTHER INFORMATION, ADDRESS

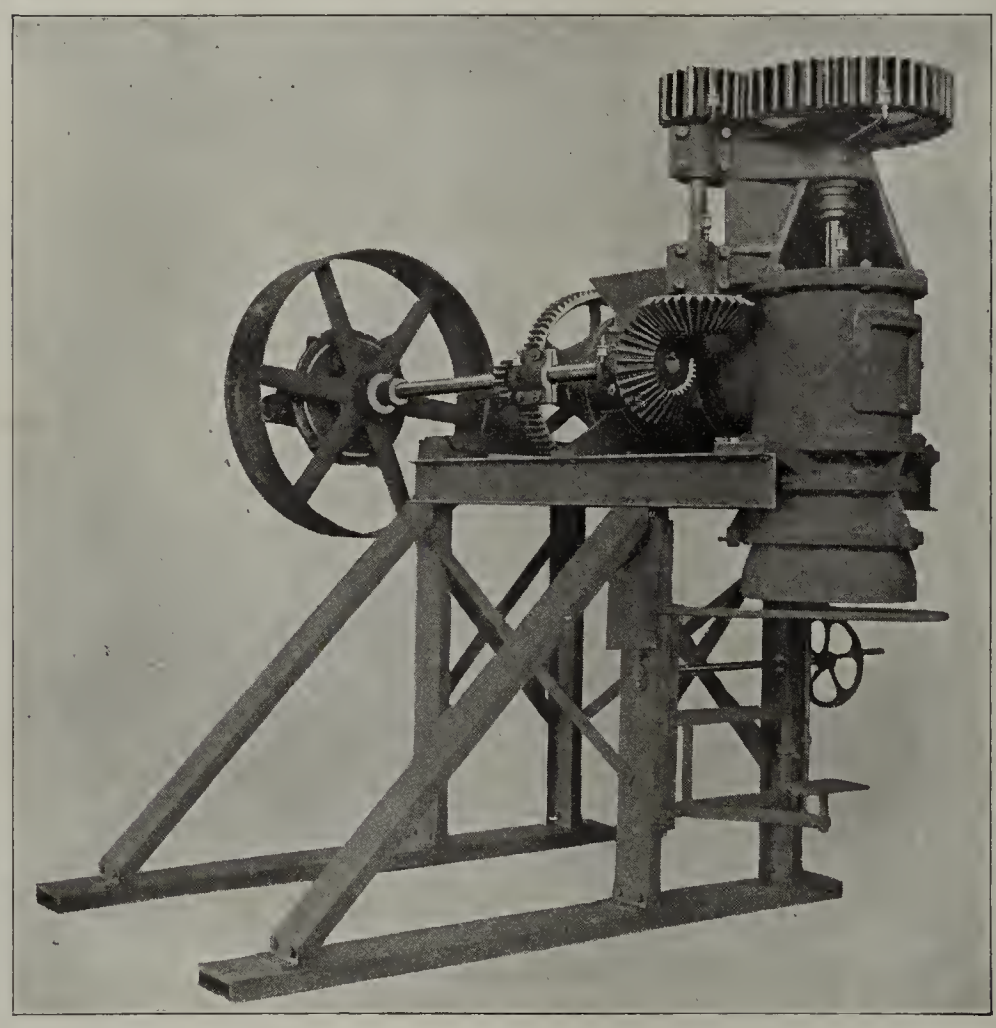
THE HENRY MARTIN BRICK MACHINE MFG. CO., Inc.

LANCASTER, PA., U. S. A.



Good News For Tile Men

The Big Profits are in the Big Tile



ANDERSON VERTICAL MILL

is the machine you need to keep you in the race.

Tile from 8 inches to 30 inches in Diameter, with dies for the different sizes readily and quickly interchangeable.

Weight of Mill, 8,000 lbs.

Can be furnished without supporting structure for mounting on wooden framework or second-story floor, or will be provided with structural steel supports, easily erected.

ANDERSON FOUNDRY & MACHINE WORKS

ANDERSON, IND.

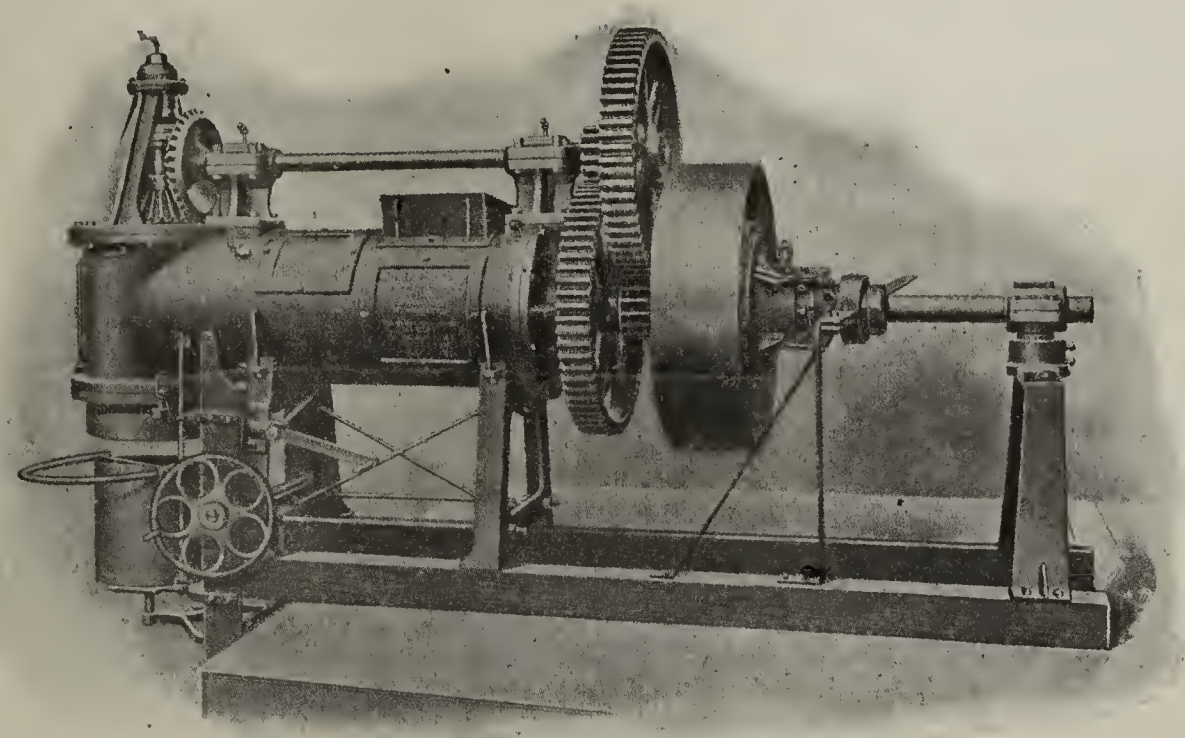
1908 NEW DEPARTURE

The Only Mill for Successfully Making Tile from 3-inch to 24-inch Diameter

Greatly Improved in Strength and Convenience

Capacity Increased 60 per cent

Power Required to Operate, 40 per cent Less



Our New 1909 Model Anderson Giant

We also Manufacture a Complete Line of

Dry Press Brick Machinery and Brick Yard Supplies

Write us your needs and let us figure with you.

The
Anderson Foundry & Machine Works

Southwestern Office, Wilson Building, Dallas, Texas. ANDERSON, INDIANA

No. 217-E
Electric Side Dump Car.

No. 145
Ball Bearing Turntable. Made in sizes from 4 ft. to 11 ft. in diameter.

No. 161-S
Gable Bottom Dump Car with [illegible] brake

CARS FOR BRICK YARDS, CEMENT WORKS, CONCRETE BLOCK MANUFACTURERS, STONE QUARRIES, ETC.

NO. 217 S
Either Side Rocker Dump Car.

TURNTABLES, TRANSFER CARS, DRYER CARS, TRACK, SWITCHES, BRICK PALLETS.

NO. 128
Heavy Double Deck Car
Patent Malleable Iron Uprights.

NO. 142
Transfer Car.

NO. 129
Double Deck Car.

NO. 277
Steel Mine and Quarry Car.

The Atlas Car and Mfg. Co.

CLEVELAND, OHIO

OF THE
UNIVERSITY OF ILLINOIS

VOL. 35 NO. 8

CLAY RECORD

A JOURNAL DEVOTED TO THE DISSEMINATION OF ALL MATTERS PERTAINING TO THE CLAY INDUSTRY

October 30, 1909

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ANNOUNCEMENT

It is with pleasure that we inform you of our acquisition of the patents, business and good will of the Horton Manufacturing Company of Painesville, Ohio.

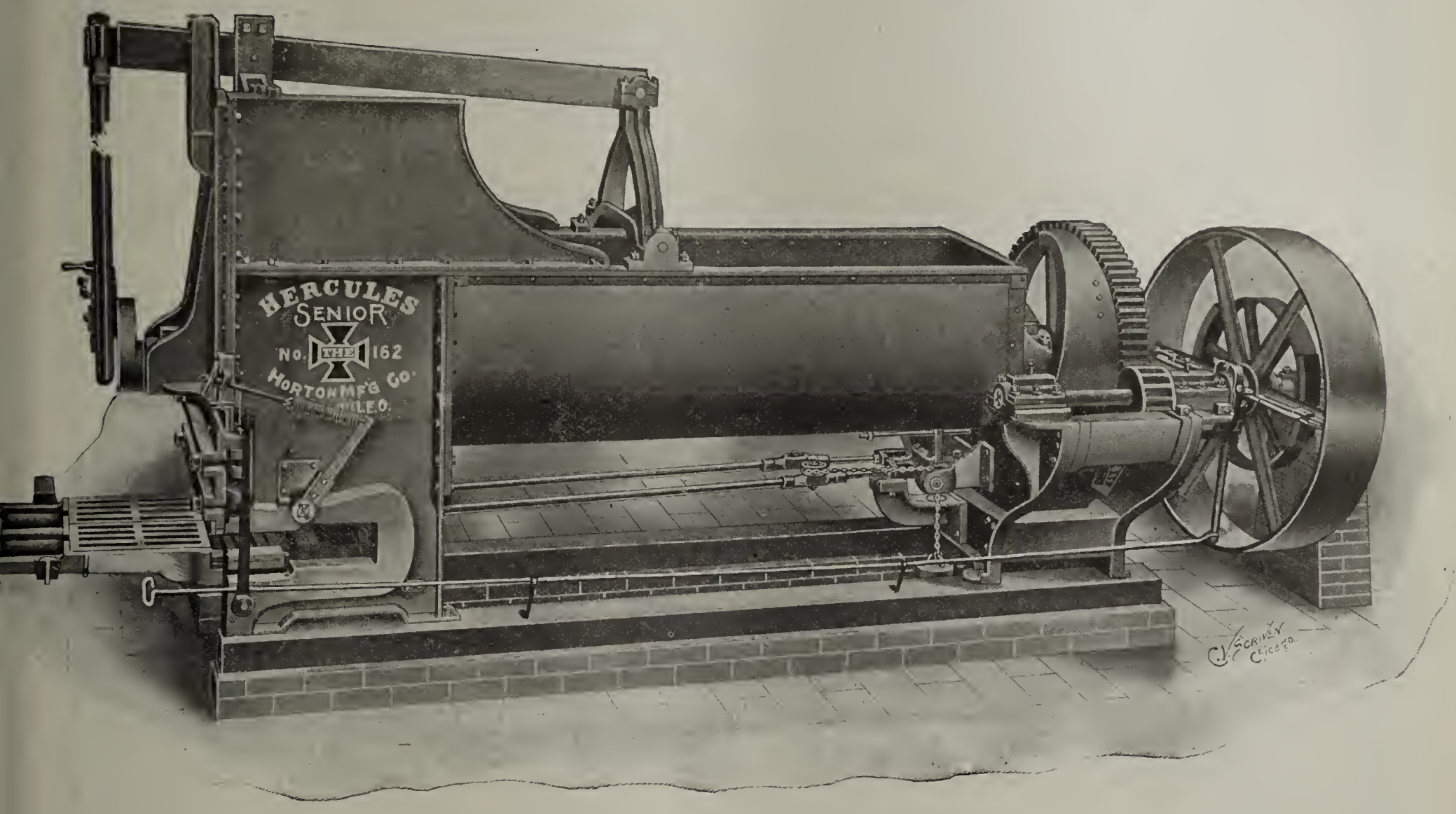
The Horton Manufacturing Company build the most complete and perfect line of Soft Mud Brick Making Machinery in the United States, which, added to our line of modern machinery, will constitute the strongest power in the world of Clay Working Machinery.

The new line will be christened the "Raymond-Horton" and is now placed before you as the embodiment of Soft Mud perfection.

THE C. W. RAYMOND COMPANY

DAYTON, OHIO, U. S. A.

The Raymond-Horton



The unification of the Raymond-Horton Soft Mud lines brings into being the magnificent results of the best thoughts on the subject. With all experiments made and every machine, with its efficiency demonstrated beyond the point where there is not the faintest shadow of a doubt as to its practicability.

The purchase is complete—every brick machine, sander, pug mill, disintegrator and all appurtenances will be manufactured at Dayton, Ohio.

New parts which may be from time to time required, will be supplied by us.

We are now ready to fill your orders for any of the Raymond-Horton line.

THE C. W. RAYMOND COMPANY

DAYTON, OHIO, U. S. A.

Silicate Brick Made by the "Division Method" Patented

THE PHILADELPHIA OPERA HOUSE

Built by Oscar Hammerstein and called the finest Opera House in the World. This beautiful building is faced with over 500,000 of our WHIE SILICATE BRICK, made under our patented process. These bricks were also used to line the wall at back of stage and also for the stairways.

The building seats 4,100 people and measures 240 feet on Broad Street and 160 feet on Poplar Street.

How would you like to make Brick suitable for Facing Buildings like this and do it cheaper than common brick can be made in any other way out of sand and lime?

We challenge any one to make as good a brick as we do by our process, and will allow him twice our cost.

The factory we built last year at Washington, D. C., is pronounced the most compact and cleanest known, and the product the finest brick produced.

WE CAN DO AS WELL FOR YOU. ASK US ABOUT IT AND LET US SHOW YOU

International Sand-Lime Brick & Machinery Company

Engineers and Contractors for Silicate Brick Factories

90 WEST STREET, NEW YORK, N. Y.

The Andrus Brick Press Makes Brick Every Day

Been doing it 20 years.
Strong Simple and Capable.
24 in operation in St. Louis District.

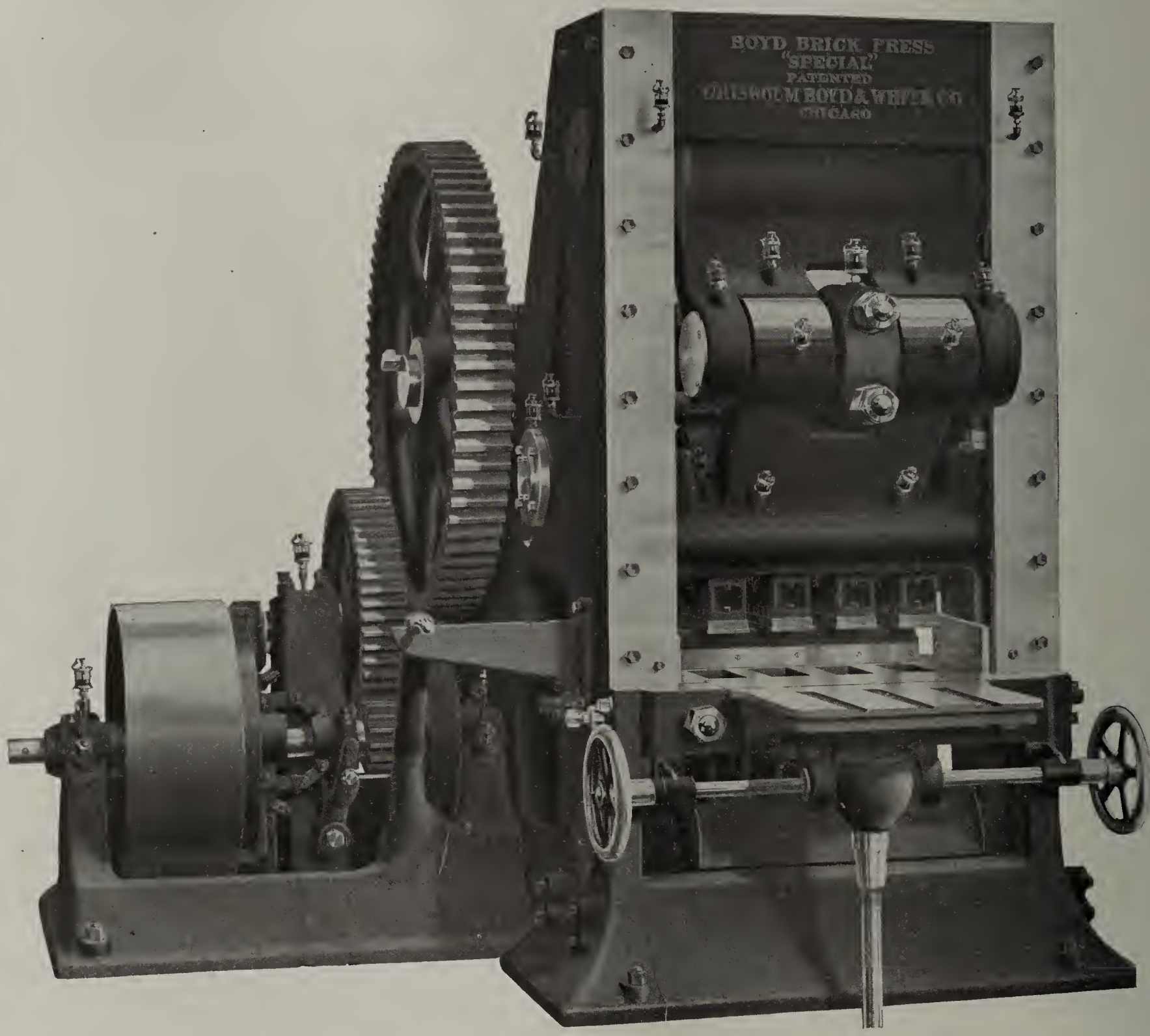
INVESTIGATE

Scott Manufacturing Co.

1815 THIRD NATIONAL BANK BUILDING
ST. LOUIS ~ ~ MISSOURI

THE BOYD BRICK PRESS

Built in Two, Four and Six-Mold Sizes



FOUR-MOLD SPECIAL

BRICK PLANTS designed and complete machinery equipment furnished. More Boyd Presses in use than all other Press Brick Machines combined.

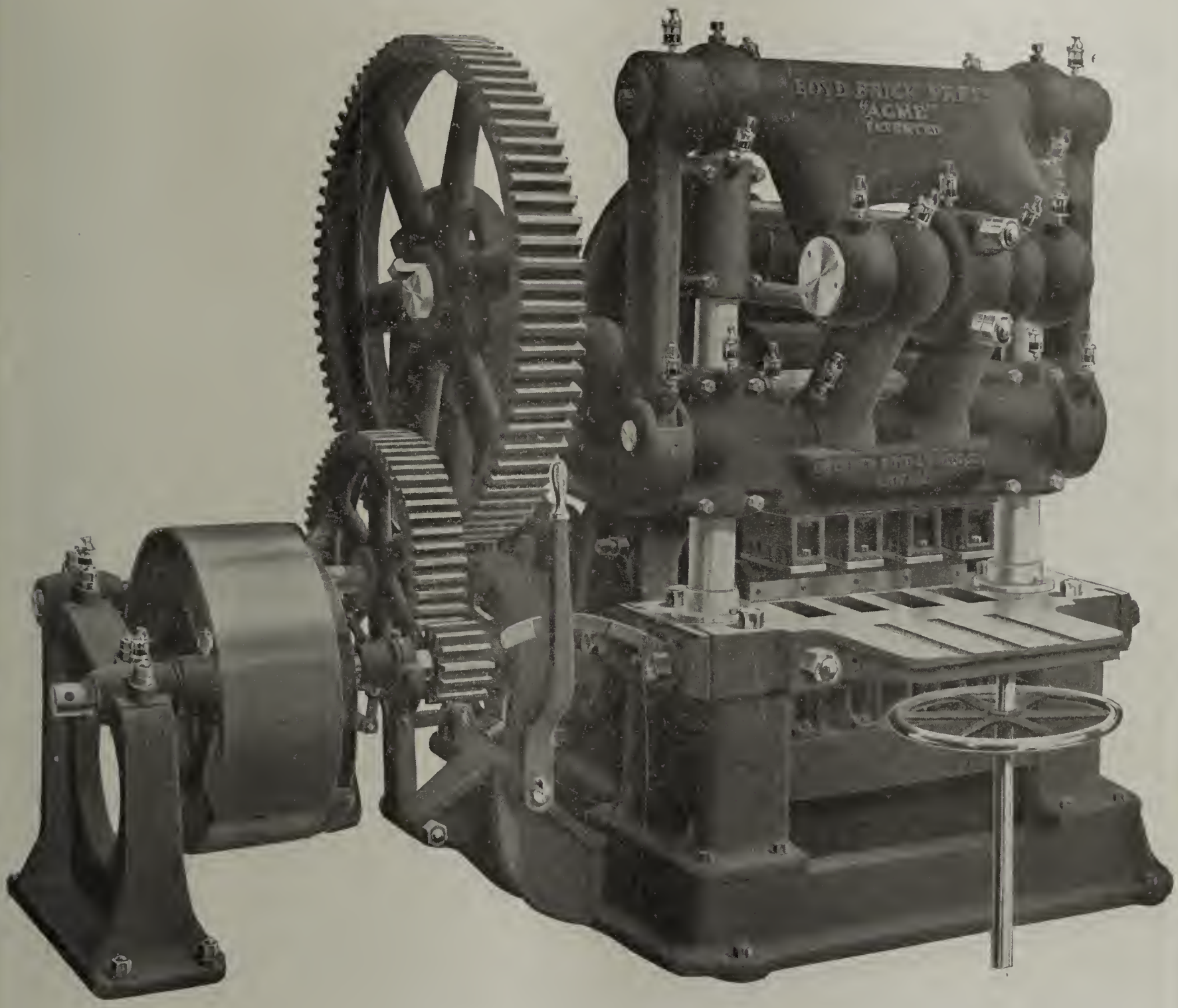
The Boyd Press has great strength and endurance, great pressure and long dwell. Boyd Presses built 20 years ago are still in use and doing good work. Brick Presses that last are the cheapest in the end.

Chisholm, Boyd & White Company

Office and Works: 57th and Wallace Streets, CHICAGO, ILL.

THE BOYD BRICK PRESS

Built in Two and Four-Mold Sizes



FOUR-MOLD "ACME"

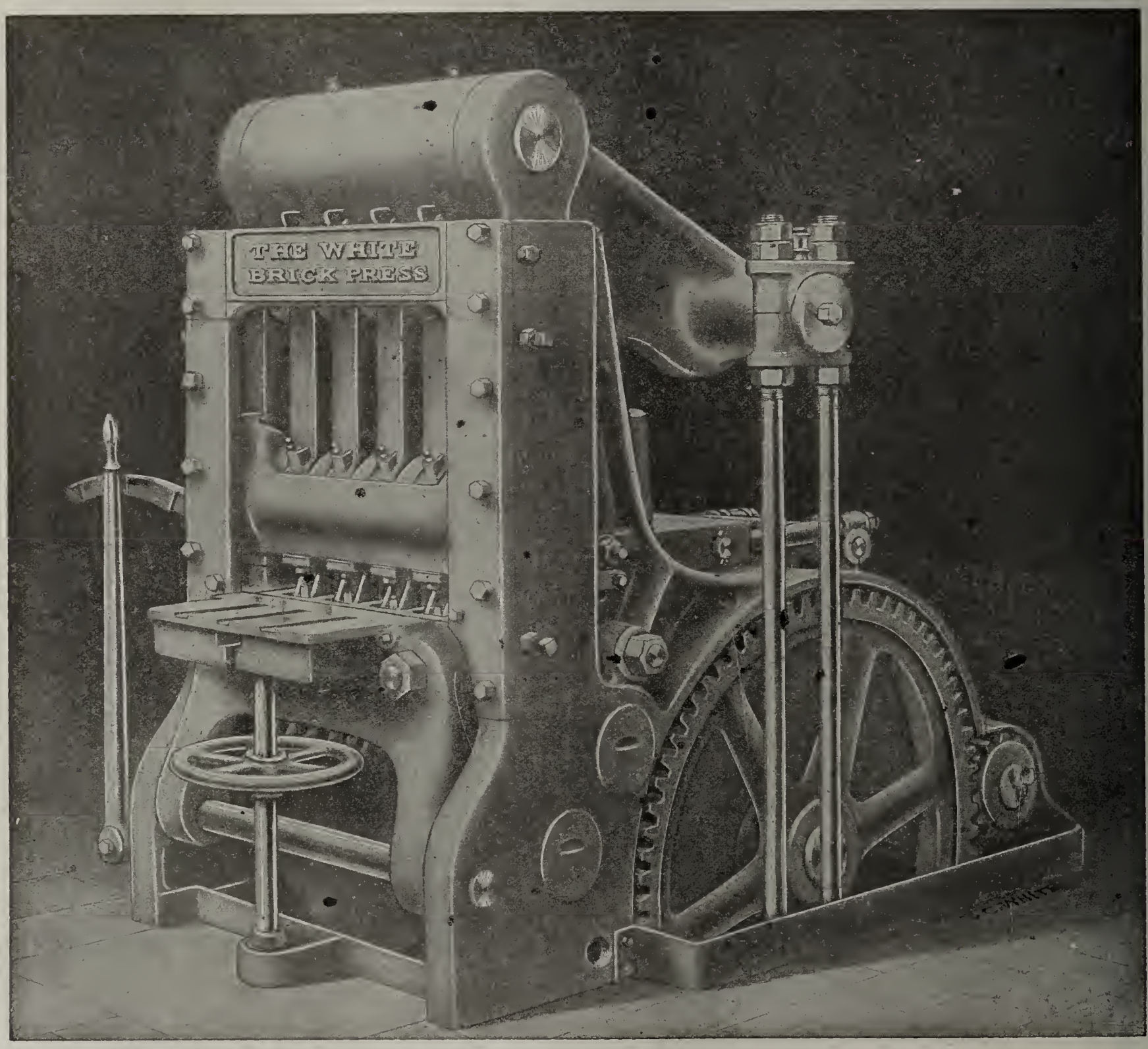
Detailed perfection, strength, endurance and quality of product have made the Boyd, the Brick Press by which all others are judged.

Write for catalogue No. 20 containing suggestions concerning the equipment of brick plants with complete plans.

CHISHOLM, BOYD & WHITE CO.

Office and Works: 57th and WALLACE STREETS CHICAGO, ILLINOIS

ALWAYS ON THE JOB
THE WHITE BRICK PRESS



When You Learn of a Breakdown on the Yard, You may be sure it is NOT the PRESS, if it is a WHITE

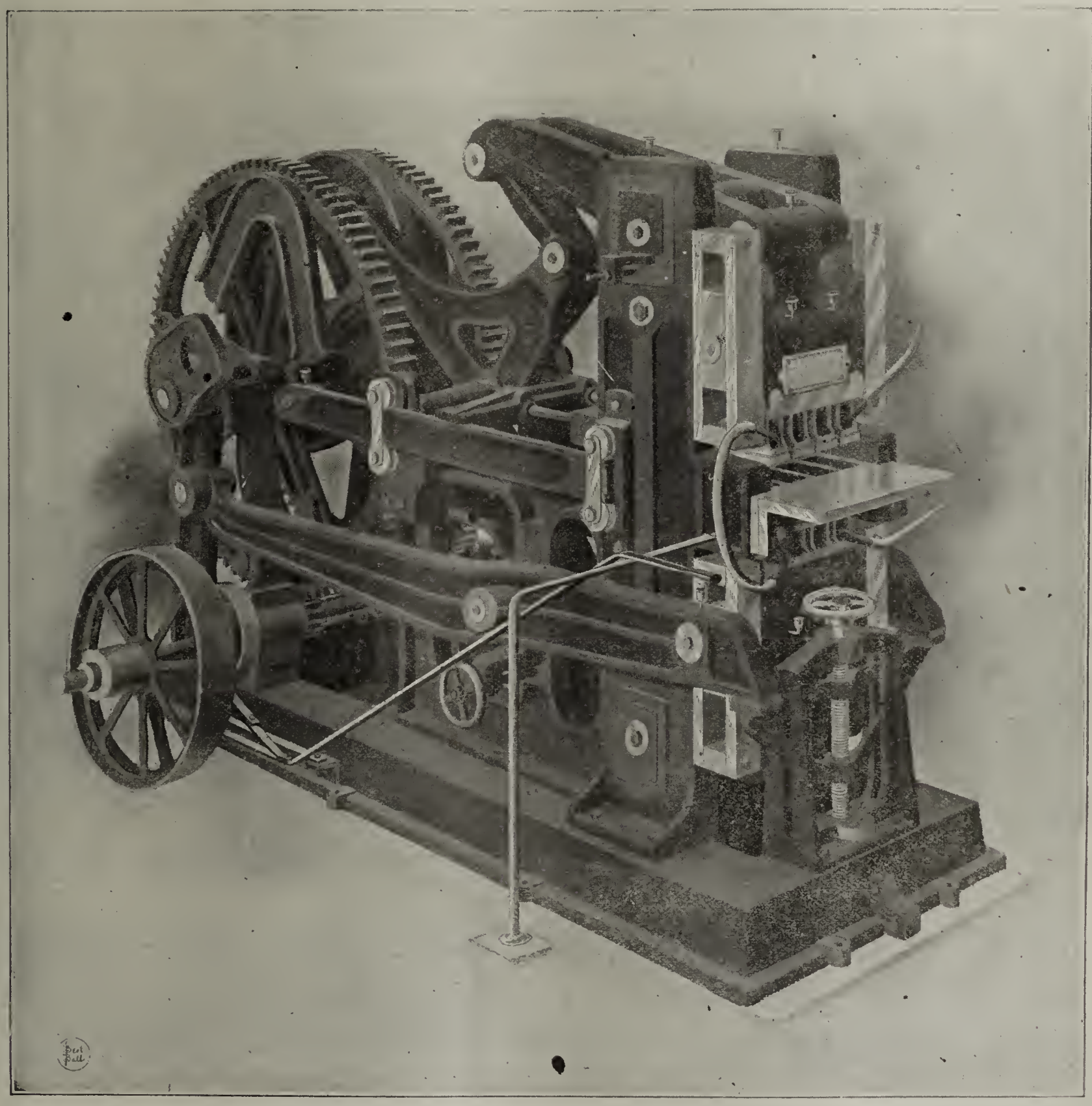
SEND FOR CATALOGUE

CHICAGO BRICK MACHINERY CO.

1308 GREAT NORTHERN BUILDING, CHICAGO

The Fernholtz Brick Press

Weighs SIXTEEN Tons, Built for Heavy Work



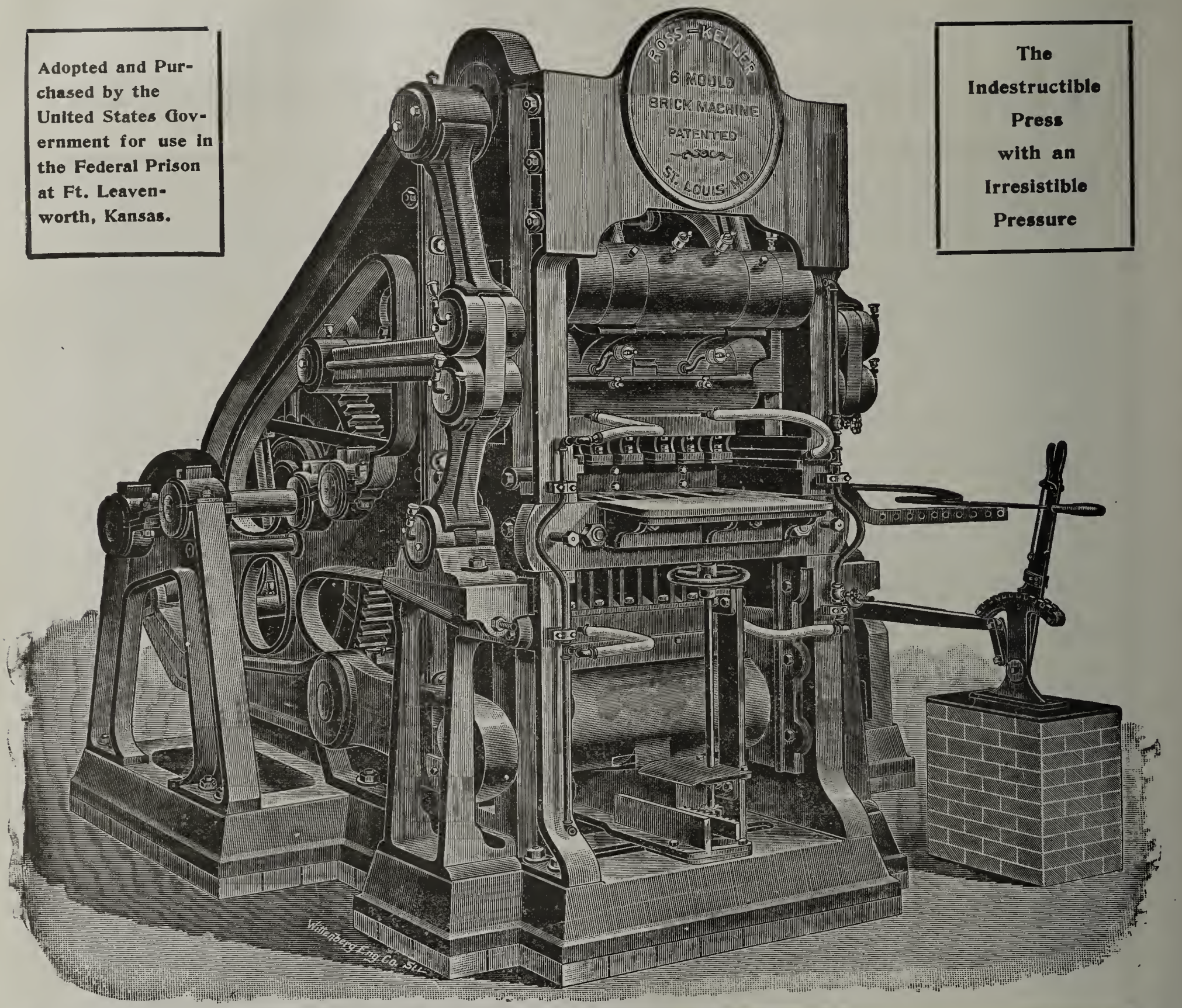
Holds Pressure on Material Longer and Presses it Harder with Less Power than any other Dry Press

The Fernholtz Brick Machinery Company

1446 Old Manchester Road, ST. LOUIS, MO.

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.

The Indestructible Press with an Irresistible Pressure



WE BUILD

Sand-Lime Brick Plants, Shale and Clay Brick Plants

ARE ALSO SOLE MANUFACTURERS OF THE

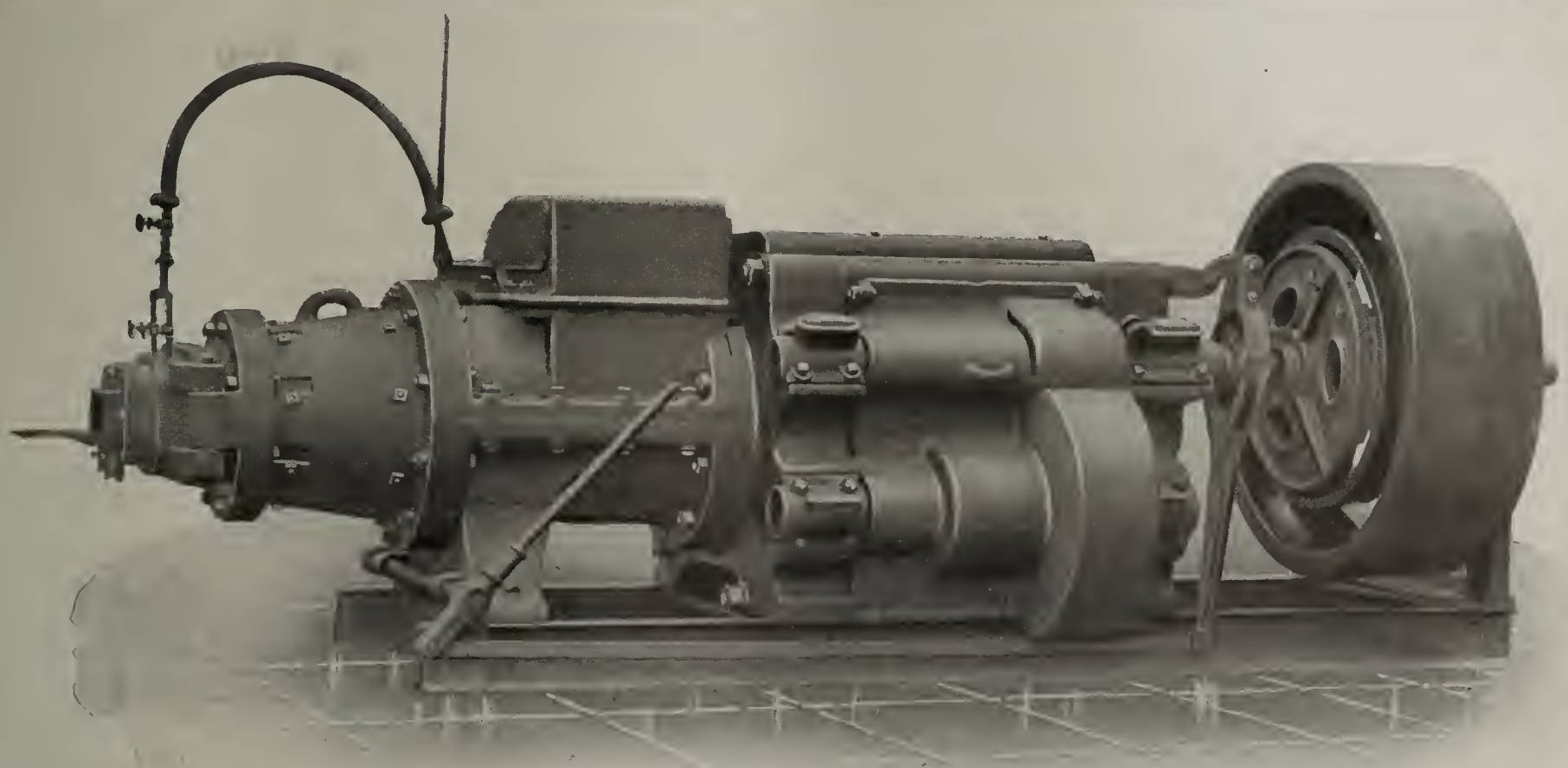
Ross-Keller Triple Pressure Brick Press

The strongest and most efficient Brick Machine made, and the only Press that gives three distinct pressures to the brick

ROSS-KELLER TRIPLE PRESSURE BRICK MACHINE CO.

OFFICES FULLERTON BUILDING, - - - - - ST. LOUIS, MO.

"Freese" Brick Machines



We build these Machines in ten sizes—Capacities to 15,000 brick per hour—also Pug Mills to suit.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build the original "Union" Machines with Pug Mills combined.

Don't forget our Automatic Cutters. THEY GIVE SATISFACTION.

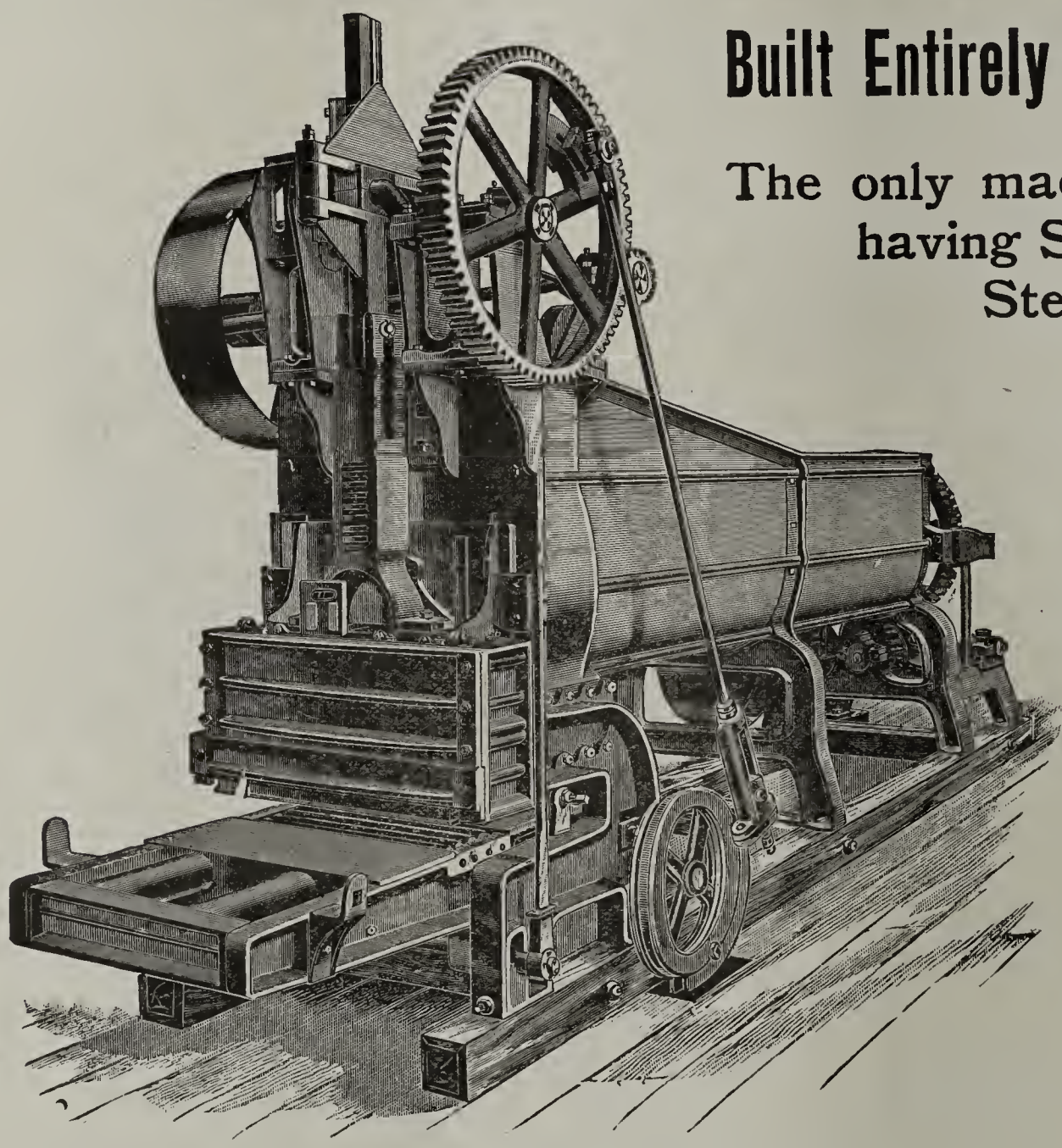
State your requirements and let us furnish particulars.

E. M. FREESE & COMPANY

142 SOUTH STREET

GALION - - - OHIO

THE POTTS
HORIZONTAL BRICK MACHINE



Built Entirely of Iron and Steel.

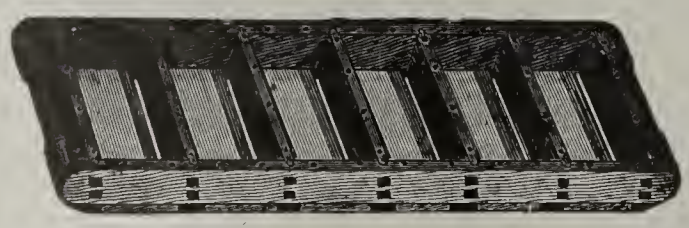
The only machine of this class having Steel Gear and Steel Shaft.

Built of the Best Material by the Best Workmen.

Simple, Strong and Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

THE LEADER OF ALL SAND MOULD MACHINES.



BRICK MOULDS A SPECIALTY

QUALITY IS OUR AIM.

We manufacture a complete line of Brick Yard Supplies. Write for prices.

C. & A. POTTS & CO., Indianapolis, Ind.

Compound Disintegrators and Crushers

As Manufactured by Potts

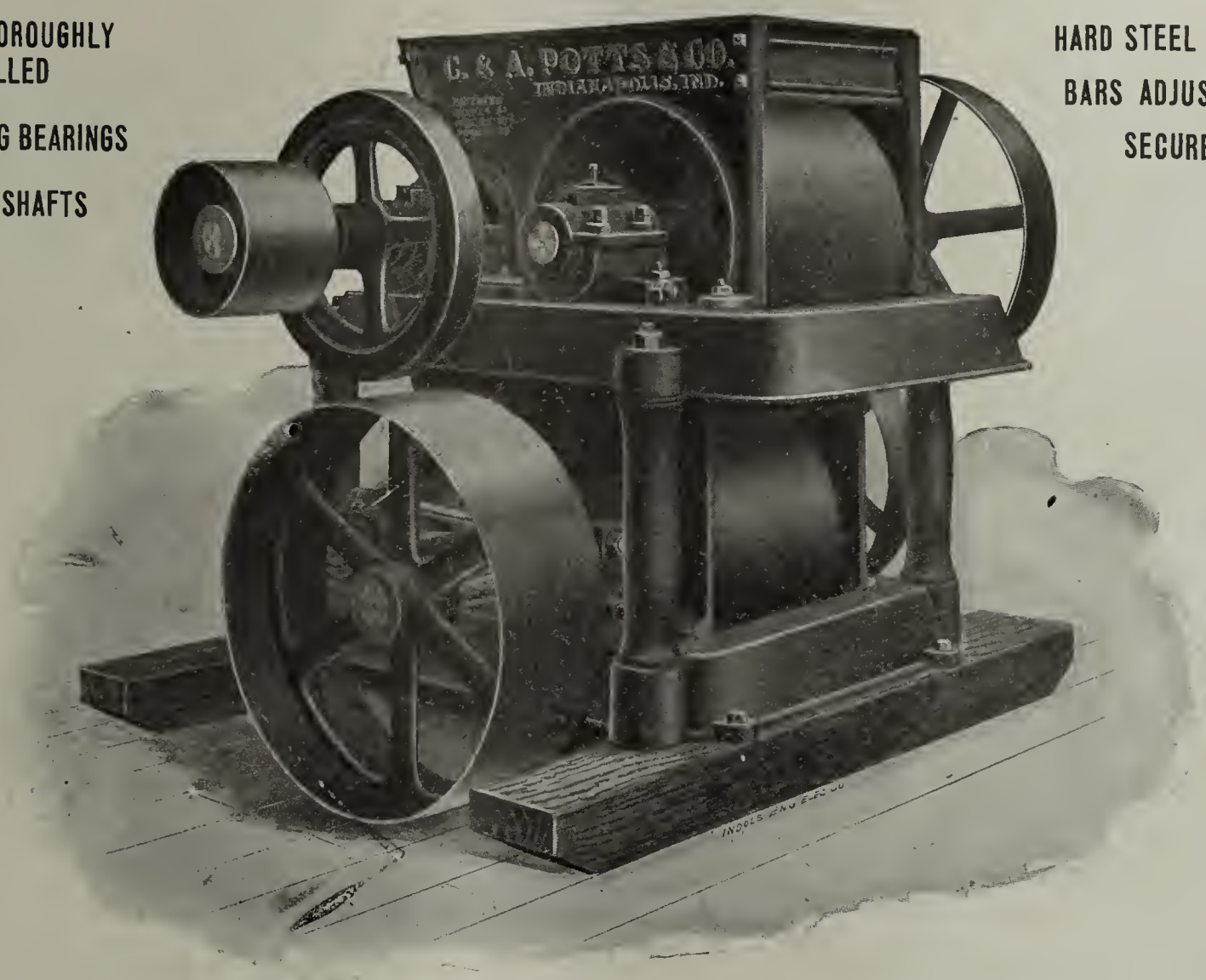
Are the best and most complete machines. Where the clay contains limestone, the Disintegrator will separate the large stones and the Crusher pulverize the small ones.

ROLLS THOROUGHLY CHILLED

RING OILING BEARINGS

STEEL SHAFTS

HARD STEEL CUTTING BARS ADJUSTA BLY SECURED



Compound Disintegrator and Roll Crusher
These Machines are made only with RING OILING BEARINGS.

Potts Disintegrators will work the clay direct from the bank.
Will not choke or clog from hard, dry or wet, sticky clays.
The MOST GENERALLY USED Machine on the market.

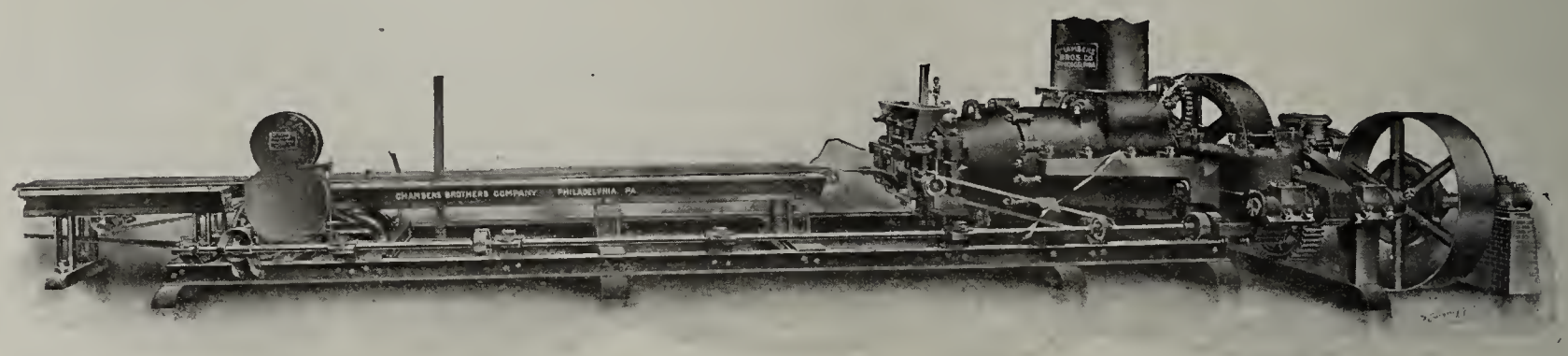
Built to Do the Work

Manufactured by

C. & A. POTTS & COMPANY

INDIANAPOLIS, IND.

Chambers Brick Machinery



Strong, Heavy Machines with Steel Pinions and Shafts; Stone Extracting Crushers, Five Sizes Disintegrators; Dry Pans; Single and Double Shaft Mixers and Pug Mills; New Pattern Clay Elevators.

Manufacturers of

THE KEYSTONE DOUBLE DISINTEGRATORS

For Grinding Tough Clays in which Small Stones may be Imbedded

Chambers Brothers Company

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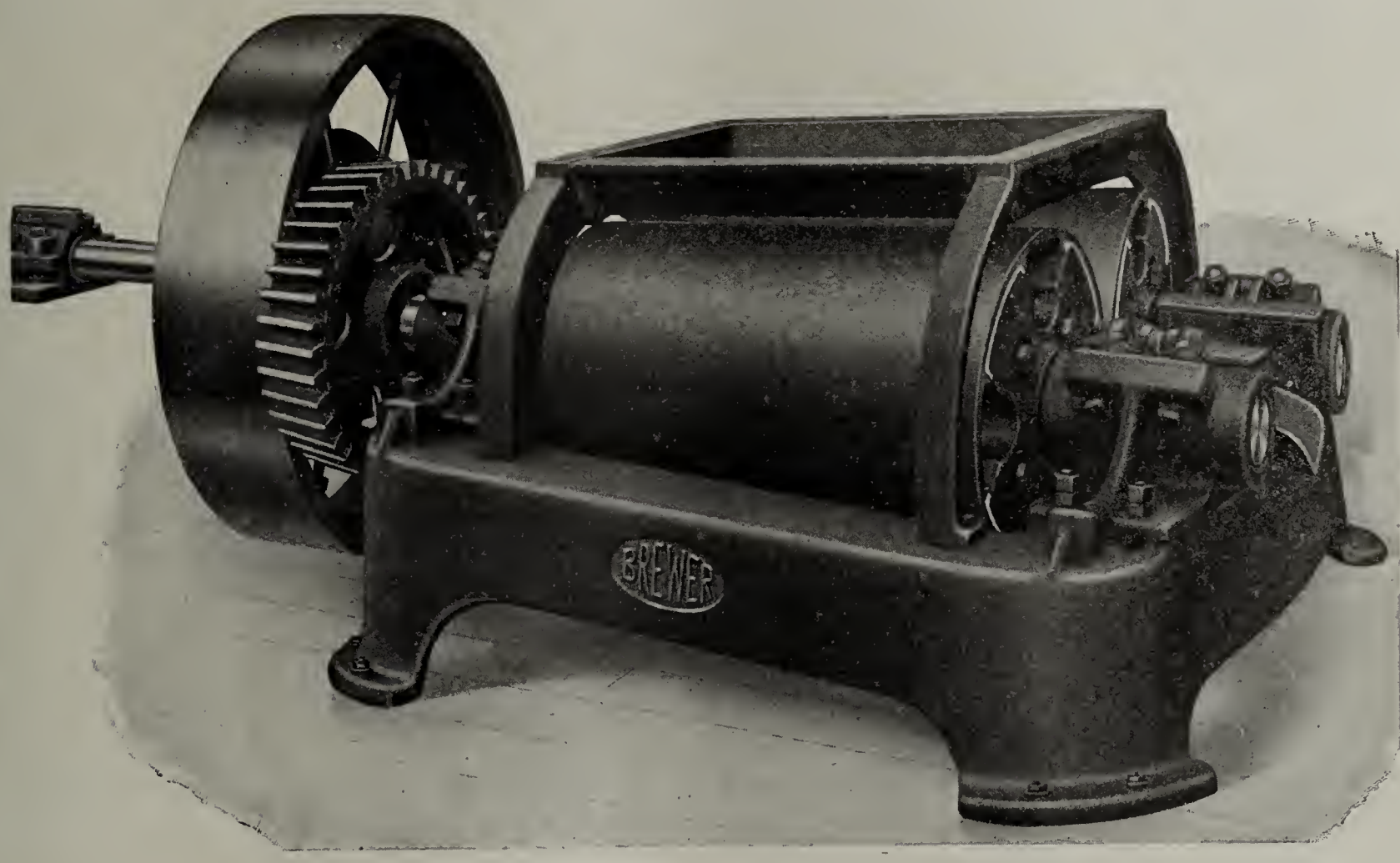

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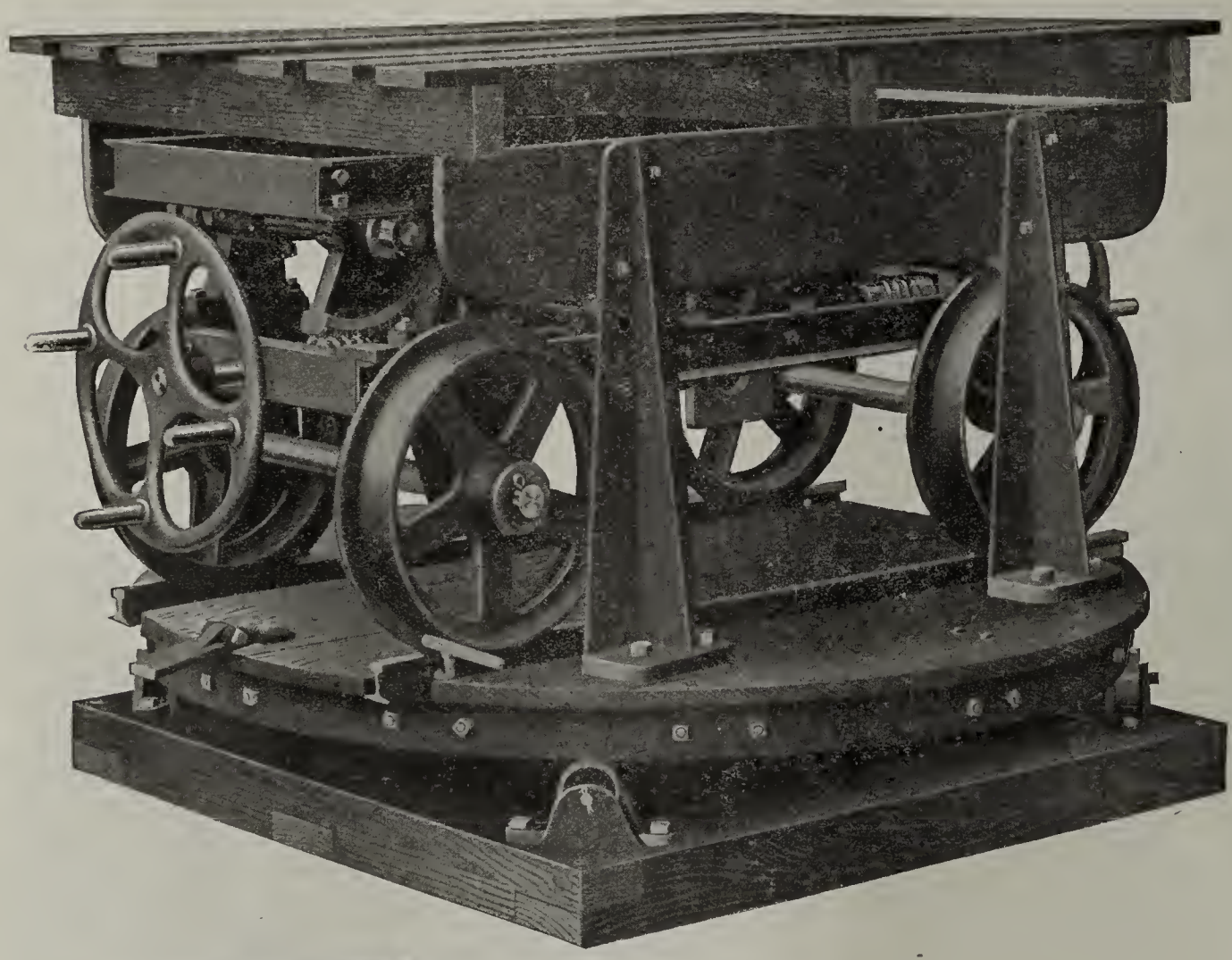

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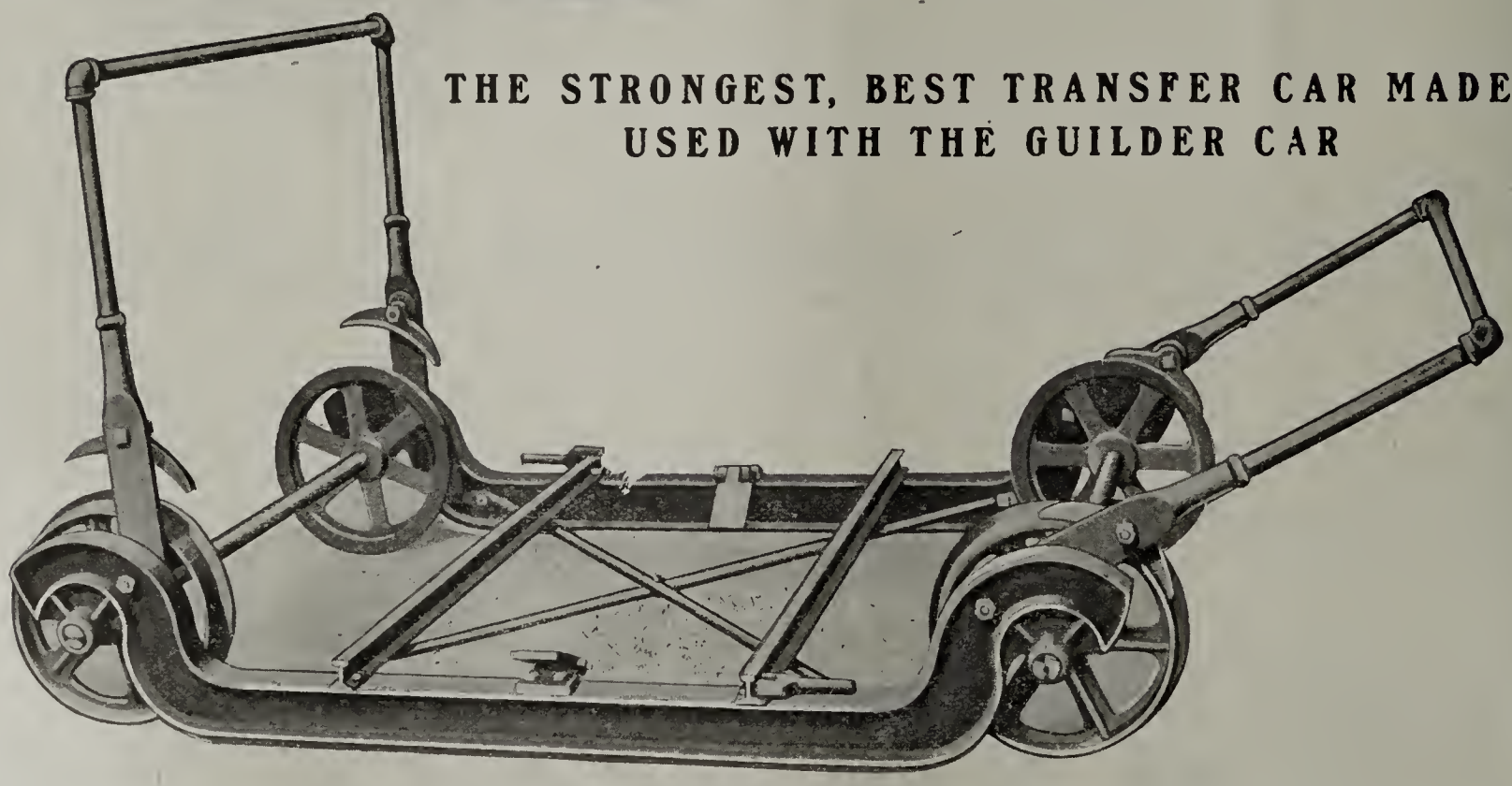

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CLAY RECORD

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"VALUE OF A BRICK-LAYING SCHOOL TO THE BRICK MANUFACTURER."*

By W. H. Heffelfinger, Director Brick Laying Department, Stout Institute, Menomonie, Wis.

Gentlemen: When Mr. Wilson first asked me to speak on this subject, Value of Trade School to Brickmakers, I wondered what I could say that would be of any benefit to you, but on thinking over the subject I found a few points, which in my estimation may be of benefit to you. I will try to make them clear and let you draw your own conclusions. I am going to divide my subject into four parts. First, I am going to try to show that we can teach bricklaying. Second, That we can teach it so as to make a better class of bricklayers and with more profit to them, their employers, builders and brickmen. Third and most interesting to you is value of such a school to brickmakers. Fourth, how to go about helping yourselves in this direction.

Under first part, I will tell you of our course at Stout Institute, Menomonie, Wis., by starting right with a boy who starts at beginning of the term and follow him through each step of course.

The student begins by learning to slake lime and to mix mortar. This is important, even though a bricklayer may hardly ever mix mortar, it is necessary he should thoroughly understand how to make it. The appearance and stability of any brickwork depends much on the mortar being well made, so it will dry out the same color, especially in buttered work, also right proportions of sand to use so mortar will not crack and crumble out. You have no doubt often seen a building where the first or second story was lighter or darker than the rest of the building. Cause of this is in the mortar, not having the same proportions of sand throughout. Whitewash caused by salt in mortar.

Then he is taught how to handle a trowel, by spreading mortar on a four-inch wall. To become proficient in this requires considerable practice, but in a day or so a student can handle a trowel deftly enough to start to lay brick on a four-inch wall.

He is then put at building the simplest forms of brickwork, such as ordinary stretcher bond in four-inch walls, and each succeeding exercise becoming more difficult. The different exercises usually take three or four hundred brick. Exercise of segmental arch for instance is nine-inch wall, six feet ten inches long, with a return of 12½-inch, span of arch being three feet three inches, and is about five feet high. The student takes up exercises in about the following order: 4-inch wall consisting of stretcher courses, 9-inch, 13-inch, 17-inch and 12½-inch walls, Flemish and American bond, construction of arches, segmental, semicircular, Gothic, elliptical, flat and inverted of different span and depth, rowlock and bonded, vaults, domes, pilasters, circular bay windows, octagonal corners, setting window and door frames, chimneys from foundations to topping out.

Student follows through this course of exercise in spread work. Then he is taught to butter, which is a part of the trade that a number of bricklayers do not know much about, but it is a very necessary part of the trade to know how to be able to do good work, and one must know how to butter to work in the large cities.

The student follows practically the same course of exercises in buttered work as in spread work, but he uses a better grade of brick, as this is a much better class of work.

Following this he is given exercise in laying press brick, ornamental brick of different kinds, building fireplaces, bake ovens, setting boilers, laying fire brick, bonding walls with galvanized iron ties, especially face brick to back wall and in veneered work, anchoring joists, bonding of block corners, retaining walls, buttresses, foundations on different kinds of soil, repointing walls, paving sidewalks, streets and gutters. He is also taught how to scaffold, how to clean brickwork, how to prepare colored mortar, how to test brick and numerous other things pertaining to brickwork.

Throughout the whole course the student works from drawings, drawn to scale, becoming thoroughly familiar with taking off and laying out work from blue prints.

Besides this instruction in the shop, he takes mechanical drawing, arithmetic, accounting and business forms and how to list off materials, such as brick, lime, sand, cement, mortar color and other incidentals, from blue prints.

We also have all the latest trade journals and such reading matter as is of vast benefit to a mechanic in our library so students can keep up to date and get a wider range of the trade.

This is the course that we are teaching at Stout Institute. The course is only one term of thirty-six weeks, but we hope to extend it before long and graduate a more finished mechanic.

We are giving our students just those things they need to become bricklayers and trying to give it to them in the

*Read at the 1909 Meeting of the Wisconsin Clay Manufacturers Association.

best possible manner. At the present time we are doing some experimenting so as to get an idea of what kind of building will be needed to take care of a large number of students in the best possible manner and expect to have such a building soon.

Other information with cost of tuition can be found in our catalogues which I will gladly send to any one who will give me his address. Now I wonder how many here will agree with me when I say: Anyone who follows this course of instruction with a reasonable amount of earnestness and proper teaching can get out as a bricklayer and with a year or so practical experience make a first-class mechanic, one who can do all kinds of work, do it well, demand good wages and get them." This is no experiment. The trade school has been past that stage for several years. I believe the time is coming when all trades will be learned in trade schools or in a school of similar order. Bricklaying has been taught and is being taught right along, but not by certain trade schools in Chicago, New York and St. Louis. They are in the business simply for the money they can get out of students. They do not try to help the students get an education. I know this to be a fact, having actual experience with them. They get up all kinds of schemes to get a man's money; for instance, they advertise to teach bricklaying and plumbing in less than three months, so graduates can earn $5.00 a day. They rush students through, find him a job with a man in league with them, who will keep a boy a day or two and discharge him. What is the result? Student does not know very much about the trade, his money is gone and he has no means of redress. These are the institutions that have done the trade school harm and make it a hard proposition for those who are trying to help the people.

Inquire into this matter and you will find I have stated it very mildly, but Williamson School, Stout Institute and others of the same kind are showing what can be done in this line of work. You may ask why are there not more of these trade schools if they are such a good thing, but say, did you ever see any new invention or idea that did not have to be fairly hammered into the majority of people? A short time back people laughed at wireless telegraphy, but only a few days ago it saved over 1,600 lives. Same way with lots of other ideas and inventions. The trade schools are not doing near as good work as they are capable of doing, simply because too many people are working against them. They are no cheap institutions to run and they need to have the people work with them. When they do you will see results that will satisfy the most critical. So much for teaching bricklaying.

Second part. Teaching trade better than by old system. Take a young man 17 years old, going to work as apprentice to bricklayer, probably he quit school at the age of 15 or right after getting through grammar school, his education being very limited. After quitting school he knocked around at odd jobs till he started to learn trade. We will say he starts in at $6.00 a week. He is put at mixing mortar, carrying hod and doing odd jobs which he does about half the time and when not doing such work he may lay brick. He is given a trowel and put to work on rough walls or backing up. What he learns he gets from watching others. No one takes time to show him how. If he makes a mistake he is laughed at or raked over the coals for it. He very likely does nothing but lay salmon brick all the first year. Second year he may do a little face work, but it depends much on the man for whom he is working, how many men on the job and size of it. He may also get a raise of $1 or $2 a week. Third year he may build a corner once in a great while and do small amount of face work, and probably another increase in wages, but at the end of that time what do we have? A man who cannot build a good straight corner or hold up his end along the line on stretcher work and cannot lay press brick, does not know anything about plans or estimating, but who is good on rough work and if he is a smart fellow will bluff along for several years making fairly good wages and in time make a first-class man, but the majority stay at rough work and never become able to do good work.

There is still two other things to consider. About half the boys that start to learn the trade become disgusted with carrying the hod and mixing mortar and quit. The other is the fact, that most boys who learn the trade as apprentices also learn the most of the bad habits as well as the trade. This is a summing up of the apprentice as he is taught today, not fifty years ago. It is just a condition arising from our rapid development and we must get something to counteract it (Trade Schools).

Now let us take a boy who enters a trade school under same conditions, no more education or money. Suppose he borrows the money ($300) to take course of instruction. At the end of that time he has the theory and a fair practical knowledge and knows how to take off materials from plans and estimate cost thereof. We will say he does not get full wages his first year, but he can get $15 a week, which is about half wages and in another year he can get full wages which ranges from $25.00 to $35.00 a week, and at the end of two years he can have paid back the amount borrowed and still have as much if not more than the other man. Which man would you rather hire or be? One not even a good bricklayer, the other a good bricklayer understanding plans and how to estimate, a better education in general and a little better morally. Again I say which is the better man?

Since it has been acknowledged that we can teach bricklaying and teach it with more profit to the boy than the old way, I will try to show where it will be with more profit to his employer, the builder and the brickman also which brings us to third part value of trade school to brickmen. Let us consider some of the things that hurt the brickmaker's business. First, poor bricklaying; second, scarcity of bricklayers which makes high-priced labor; third, lack of holding up brick before the public as the best building material. Nearly every contractor who employs bricklayers is looking for men who can throw them in, as they express it, but at the same time they want the work done right. Why? Simply because it means money to them to have it done right. It is very easy for him to get men to lay rough walls, but men that can do all kinds of work are scarce. Result is lot of rough work. Again if you have ever been around building operations very much, you have no doubt heard the builder protesting against a man or apprentice who may be working on face and doing poor work. That is one reason apprentices do little face work. All these things take up a contractor's time and hurts his business. Now if his men put up work that will please the builder he will get a reputation for doing first-class work, which will often get him a better price per thousand or get a contract when he is not the lowest bidder. This is where a good bricklayer benefits his employer. Again if bricklayers did first-class work all around more people would build with a better grade of brick, which would mean more money to the brickmaker, as there is more money in making a good grade of brick than a poor grade. Is there not?

Scarcity of bricklayers. This is one condition that often hurts the brickmaker very much. We need more bricklayers, that are first-class men. The increase in

number of bricklayers does not come near keeping pace with increase of population and business of this country, according to census report of 1890 there were 161,845 bricklayers, stone masons, tile setters and plasterers and in 1900 there was a decrease of 40 or just about the same, while the population of the United States has increased over a million people a year. That is why there was such a scarcity of bricklayers during the years of prosperity from 1900 to 1907. Every one here I presume has felt the effect of the scarcity of bricklayers during those years. One man has I know, because in his answer to Prof. E. R. Buckley's letter last year as to what was most needed by brickmakers he said: "More and better bricklayers, better start a school for them." Again did you ever notice how many bricklayers were past fifty years of age? A builder at a St. Paul convention of builders and educators said that 80 per cent of bricklayers were over fifty years of age. Think what that means to you as brickmakers. Let us look at one of the results of the scarcity of bricklayers. Builders, who could not get bricklayers, looked around for some other building material that could be handled with cheaper labor and labor that was not so scarce. The result was he took up concrete. I believe that very condition had more to do with advancement of concrete than any other. Concrete has come to be a menace to any one interested in brick, but cheap labor is the only redeeming feature in it. The only place where cheap labor can be used is where concrete is built to forms, cement bricks and blocks take bricklayers to lay them and nine out of every ten would rather lay clay brick. Labor is the chief argument, the concrete men put forth. They have all kinds of theory but nothing practical. Even with cheap labor they have not swamped brickmakers and never will, but they do have people talking concrete. What we want is people to talk brick. Here is where the bricklayer helps, because he will talk brick. It ought not to take very much talking to convince anyone but a concrete man that concrete is not in a class with brick, except when it comes to filling up holes under water or some rough work.

We all know a concrete building is not to be compared to a brick one in looks. The most of the concrete buildings look to me like imitations of some old dilapidated stone building only not so beautiful. When they do get one to look respectable the cost is away above brick. Who is it that really decides of what material building shall be built of? Is it not architects and contractors? Architects in most large buildings and contractors in small ones, so here is a necessity of having more brick contractors who can put up a good argument for their work.

Take a good live bricklayer and you will find he is trying to work up his business by doing good work, and putting advantages of building with brick before prospective builders and each good piece of work he puts is a standing ad. for him and the brickmaker.

Bricklayers' unions are taking up the subject of fireproof construction of brick especially in construction of public buildings and are trying to show to the public officers the advantages of such buildings and in many other ways they are boosting brick.

This is the class of bricklayers we are trying to turn out, men who will think and make the best of their trade by continually boosting brick and its advantages. Now let us sum up the reasons why a trade school of bricklaying will help the brickmakers.

First: Turn out a better class of bricklayers, men that will satisfy the builder, thereby increasing the demand for brick buildings and cause a call for more No. 1 brick.

Second: Increase number of bricklayers, which will keep builders from looking for other material with which they can use cheaper labor.

Third: Get more people talking brick, thereby creating a greater demand.

How To Go About It.

Advise boys when you have a chance to learn bricklaying at a trade school, talk trade school and its advantages over the old apprenticeship way, study up the trade school proposition, their methods of procedure and results, so you can talk intelligently about it, try to get bricklaying in your manual training course in high schools, as well as other trades and make them practical, let people know there is more science to bricklaying than just "slinging mud." After studying these conditions and our course and you are satisfied Stout Institute is doing a good work and that they can teach bricklaying and other trades, put us in touch with those boys who would like to learn a trade, so we can put our proposition before them. We also have a department in plumbing, which has proven highly successful under directorship of H. W. Jimerson, a practical plumber of 20 years' experience.

We extend a cordial invitation to you all to visit us any time you may be in Menomonie.

A General Discussion.

Mr. A. W. Hilker: I move that the convention extend to Mr. Heffelfinger a vote of thanks for his valuable paper.

Motion seconded and unanimously carried.

Mr. Richardson: I would like to know how this school is maintained.

Mr. Heffelfinger: It is maintained at the present time by Senator Stout, who runs the Stout Institute, and this department is conducted as an auxiliary of that institute. The charge for a course of training therein is $100.

Mr. Richardson: I would like to know whether the graduates of that school have any difficulty in being admitted to the bricklayers union.

Mr. Heffelfinger: I cannot give a definite answer to that question, inasmuch as we have started the school only last fall, but as far as getting into the union is concerned, I will say that it is only a question of whether the graduate can do the work or not. If he can do the work they want him; if he cannot he does not get in. It is better for them to have him in the union, if he is competent, than to have him on the outside.

Mr. W. J. Craney: The question here arises as to the conflict between the brickmakers and bricklayers' union. As we all know, it is the well-established dictum of the bricklayers' union to allow a contractor but one apprentice, and the contractor is compelled to keep such an apprentice for three years. Statistics show that there is one and one-half bricklayers dying to one and one-half bricklayers learning the trade, so that as it has been stated, the supply of bricklayers is being diminished, while the demand is increasing. Now it strikes me that if we advocate more bricklayers in our business the present bricklayers will retaliate by doing everything in their power to hurt our business. I feel convinced that if I in my local community should have it advertised that I advocated sending boys to this school every bricklayer in my town would refuse to lay my brick, and yet we can readily see how we would be benefited by such a school.

Mr. Heffelfinger: They must have brick or they cannot follow their trade. If you stand by this trade school I am sure that they would soon come to time, even though they should refuse to lay your brick for a while.

President Kennedy: I am afraid that Mr. Craney sees a little too dark. I will say that in our high school the subject of manual training came up recently and the sub-

ject of teaching the boys carpenter work and cabinet making was brought up. I suggested the idea of bricklaying and it was something new. When we had our convention at Menomonie, Wis., I told them at the banquet that night that apparently they taught everything at that institute but bricklaying, and that I saw no reason why they could not teach that as well as the other trades. You can see for yourself the fruit that my suggestion has brought. In our school this year they added to their studies domestic science, and I suggested there that they ought to add bricklaying. There was a man on the floor immediately after I spoke who wanted to know where bricklaying was being taught in any school. I told him that such an institution was being maintained at Menomonie, and my remarks precipitated a general discussion in the school meeting. It pleased me very much to see one of our leading masons, a man who has been a bricklayer and a contractor for years, speak of the suggestion with enthusiastic favor. Among other things he said that nothing better could be done for the general good of the brickmaker, as well as the contractor. He said that the great obstacle today was that our bricklayers were generally older men, and that the younger men did not take kindly to learning this trade under present conditions, because they had to spend three years of valuable time in mixing mortar, carrying the hod, and rushing the beer pail. And that it was pretty hard work, and it was not surprising that the boys became disgusted. I think that if the idea was advocated in our own school districts it would be a simple matter to so mould public opinion as to favor the addition of bricklaying to the high school curriculum. As a starter, the man making the brick in the town could offer to furnish the brick at a small price in order to encourage the new department, and even if he should contribute towards the expense of a teacher for the first year, it would pay him well. He might be able to induce some brickmaker to go there during the slack part of the year in order to help bear the expense. I do not think the bricklayers would look with disfavor upon a boy who got his education there. In a great many cases today the apprentice does not develop into a competent man at all. He is a bricklayer and nothing more. He is not able to figure plans, nor is he able to estimate from blue prints. These matters would all be taught in the schools and would serve to uplift and better the conditions of that class.

Mr. Richardson: I feel that I have been talking too much already, but you have brought before you a subject which it seems to me will bear any amount of discussion, and upon which you can spend profitably any amount of time. It is a subject which is going to come before you a great many times in future years, and it is a subject upon which I think you should take some action at this time. The question is: Are you going to support this bricklaying school or not? Or are you going to say, as one gentleman did: "I dare not advise young men to go to the school, because if I do the bricklayers of my town will not lay my brick." And is not that today the position of the brickmakers practically throughout the country? This fact was realized in the National Convention two or three years ago when some fifty or sixty scholarships were subscribed for by the National Brick Manufacturers' Association. That was the least they felt they could do. They were in somewhat of the same position that this man is. At home, among their bricklayers, they had to be careful, and yet they were all suffering, as you have been, for the lack of bricklayers. I wish you could have been present at the Rochester Convention of National Brick Manufacturers' Association last week, and have heard the speech by Mr. Williams, who is the president of the Builders' Exchange in Scranton, Pa.—which was not scheduled on the programme. He came to that meeting voluntarily, at his own expense, to say a few words to the brickmakers about the different trades unions and brickmakers' unions hurting the brickmakers' business. After he had spoken for 10 or 15 minutes, he looked at his watch, and he was about to stop, but he had so interested that body of brickmakers that one of the old warhorses of the brickmakers' association got up and moved that Mr. Williams be allowed to finish his talk, "if it took all evening," and I wish you could have heard that man continue for an hour on that subject. You will have to wake up to this important subject some day, and the sooner you begin the better it will be for you. The bricklayers' unions are in truth the organizations who are retarding your progress. I do not speak of the bricklayers' unions with disparagement, for I will give my sympathy to any movement which will pay an honest man an honest wage for an honest labor. But when the bricklayers arbitrarily limit the number of apprentices to a figure so that we cannot get men enough to follow the vocation, and when they by their arbitrary action boycott any brickmaker who may transgress upon their dictates—then it is time for the brickmakers to take a united action to relieve the situation.

Mr. Hilker: I do not believe that you need to be afraid of having any troubles with the bricklayers' union. They tried one of their bluffs on me a while ago in my home town. I am interested in a shoe factory there, and we were putting up a new building. Their walking delegate came to our secretary and he said: "I want you to understand that you have got to give the union contractors a chance to figure on this building." "Why, certainly," said our secretary, "send them around and we will be glad to let them figure." He promised that he would. We waited three weeks, and no one came. The secretary then asked me: "What shall we do about it?" I said: "Open your bids and go ahead." He said: "We will run up against that union." I said: "I will take my chances." We opened the bids, and the contract was awarded to a non-union contractor. There was another man interested in the shoe factory with me. They sent a committee to him, and he is a very friendly man, and he tried to smooth the matter over by taking that committee out until they didn't know what they were doing. They finally said: "I guess we will let Mr. Fox go, he is a good fellow." Then they waited for me. I avoided them for twenty-four hours, until they finally ran me down. When they approached me they said: "We have got your brick boycotted." I asked them, "Did you agree upon that in your meeting?" And they said, "Yes," and I said, "Did you keep any minutes of that meeting?" And they said, "Oh, no, we didn't make any minutes." I said, "You didn't dare do that, did you? Now," I said, "I will give you until tomorrow morning, 8 o'clock, and if I do not hear from you by that time I will teach you some things that will make you sorry for what you have done." A 7 o'clock the next morning my telephone was ringing until I thought it would not stop, and when I answered it, they told me that the boycott had been called off. That is as far as the union goes. In my opinion they have seen their best days, and they are on the downward path.

Mr. Marion W. Blair: It seems to me that you are losing sight of one important feature in regard to the trade-school question. The present bricklayer, the average bricklayer today is an unedcuated man, not only in his own trade, but in any other way that you may look at it. Where you today have one intelligent man on the wall who can read specifications and understand plans, and who can trace a line to the corner so that you can leave the job for 10 or 15 minutes and trust that work to

be done properly, you have ten men on the job that you cannot trust while you turn your back. This will work itself out as you educate the bricklayers and give them a good education and raise the scale of intelligence of the mechanic. Then he will not want to belong to a union and he will be progressive, and it will be his ambition to do the best work and it will not be his ambition because some less competent fellow only lays 800 brick in a day to retard his work in order that the other fellow may hold his job because they both belong to a union. One man depends upon another, and his pay depends upon another, and he won't stand for a slow man in that place. That will be the result, if you foster the bricklayers' school, it will raise the standard of intelligence among bricklayers, and they will all come to do better work, and the union will gradually lose control over that class of men.

President Kennedy: I do not wish to be understood as saying a word against the union, for I think that a union properly handled is a good thing and a very necessary thing for themselves. Before we had unions, as Mr. Vogt has said, and I recall the time very well when the men received prices for laying their brick which did not permit of a competence, until it came down to $2 a thousand. Now it costs about $13 a thousand, and that means more for laying the brick than the brick costs. I do not believe that the bricklayer will object and say that you are unfair by encouraging the young men to learn that trade, and I feel convinced that they will not keep him out of the union, but on the contrary, will be glad to have him in the union, for they want intelligent men that know their business. It is a well-known fact that contractors today have not apprentices enough to keep up with the demand, and I know from personal experience that a good many times during the summer letters and telephone messages reach us: "Where can we get bricklayers?" The season is short for laying brick, and they cannot get enough men to lay the brick for them in that time. That is one reason why the cement man today has got us on the run. The builder cannot get the brick laid, consequently they have to turn to something else.

Secretary Wilson: I just want to say, for the benefit of the members of the association, that the company whom I have the pleasure of representing recognizes the value of an institution of this kind to ourselves—and I believe that we all will appreciate it. It is working along the right line to give us more mechanics that will help to get our bricks into the wall, a good deal easier than it has been during the last few years, and we are encouraging that department of this institution just as far as it is possible for us to do. We have a few bricklayers in our town, and it is none of their business and none of their affairs whether we are or not assisting this institution. Of course, we are not going out publicly and telling them what we are doing. We are simply attending to our own business and encouraging this institution in every way possible, and I think this is an opportunity for every one of us to do some good. We do not necessarily need to get a brass band to go up and down the street and tell every bricklayer in the town where we are located that we are doing this, but do it in our own way, and I am sure it will work itself out to our mutual advantage and for the advantage of all the brick manufacturers in the state.

Mr. L. T. Crabtree. There is a homely old saying that is always true, that it is poor practice to cross a bridge until you come to it. Now looking at it from the standpoint of the brick manufacturer, it seems to me that Mr. Heffelfinger's paper is one of the most valuable we have had here today. It opens a line of work that is very necessary in the brick business in order that it may prosper. As has been stated before, one of the reasons why the cement business has prospered is the scarcity of bricklayers, and especially is that true of the smaller towns in the state. I have recently read a paper wherein statistics showed that 80 per cent of all the bricklayers are past the age of fifty. That means that they are dying faster than they are learning, otherwise there would not be that discrepancy. We have all noticed this fact, that in any place where there is any large building to be erected in a small town, the contractors are obliged to send away to a larger city in order to get bricklayers. I know of an instance in a small town only recently, where the contractors were obliged to send to Milwaukee in order to get a sufficient number of just ordinary bricklayers, not skilled men, and therefore, if there is anything that we as an association can do to assist this enterprise at Menomonie, I think we should do it, and I think it is perfectly safe for us to go ahead and do what we can and not attempt to cross the bridge until we come to it. I do not apprehend any trouble. The unions recognize the value of trade-schools, at least I notice that they do not take exception to trade-schools, and I know of some cases in which unions have endorsed trade-schools. I remember of reading of one union in a large city recently officially endorsing the trade-school for that trade. I think if there is anything that we can do to assist our people and young men in our different localities in attending this trade-school, or inducing them to go there, that we need not apprehend any trouble from the unions. Their tendency is not in that direction any more.

Prof. Weidman: In order that there may be some intelligent and concerted action had upon this important subject I move that the Committee on Resolutions be instructed to bring in a resolution and proper recognition of the work being done by the Stout Institute at Menomonie.

Motion seconded and unanimously carried.

FUEL TESTS OF ILLINOIS COALS.

"Fuel Tests with Illinois Coal," issued as Circular No. 3 of the Engineering Experiment Station of the University of Illinois, presents the results of an elaborate series of tests conducted at the fuel testing plant of the United States Geological Survey. The circular is compiled by L. P. Breckenridge and Paul Diserens. It deals only with coals taken from mines within the State of Illinois. The investigations described include steaming tests under boilers, gas producer tests, washing tests, coking tests, briquetting tests and tests to determine composition and heating value. From the results stated it appears (1) that the average calorific value of Illinois coal (ash and moisture free) is 14319 B. t. u.; (2) that its evaporative efficiency is but slightly affected by the moisture it contains; (3) that its evaporative efficiency decreases as the ash and sluphur content increases, and that when burned in a hand-fired furnace its evaporative efficiency decreases as the amount of fine coal contained in it increases; (4) the performance of Illinois coal in a gas producer compares favorably with that of any other bituminous coal tested at the U. S. G. S. laboratory. (5) one-fourth of all the samples tested may be used for the manufacture of coke; (6) briquetting improves the evaporative efficiency of Illinois coals only when the raw coal is in the form of slack or screenings.

Copies of Circular No. 3 may be obtained gratis upon application to W. F. M. Goss, Director of Engineering Experiment Station, University of Illinois, Urbana, Ill.

NEW STATE LAW MAKES IT NECESSARY FOR ALL EMPLOYERS TO LOOK AFTER SAFETY OF EMPLOYES.

Copies of the new state law providing for the health, safety and comfort of employes in factories, mercantile establishments, mills and workshops in Illinois have been received by many manufacturers. This law will go into effect with the beginning of the new year and the state department is sending out the copies of the law in order that all may become posted on it before the time it is effective. Edgar T. Davies, chief factory inspector, sends out copies of the law and with these he sends a circular letter, one of the paragraphs of which reads as follows:

"A careful reading of the provisions of the law will, I think, clearly indicate that the law is intended not only as a safeguard for the employe, but that a strict compliance of the law will be of substantial benefit to the employer. Ample time is allowed before it goes into effect for owners of establishments to rearrange their plants or establishments wherever necessary, and with the cooperation of factory owners in making the provisions of the law known to their employes, in the meantime the transition from the present to the required changed conditions may, to a considerable extent be accomplished by January 1, 1910, the date on which the law becomes effective."

The provisions of the law applying to factories, mercantile establishments, mills and workshops are, in brief, as follows:

All machinery when in operation is dangerous, and should be considered so by the operator. It should be so protected as to offer the least possible chance for injury to those who operate it.

All set screws or other projections on revolving machinery shall be countersunk, or otherwise guarded when possible.

Means shall be provided and placed within convenient reach for promptly stopping any machine, group of machines, shafting or other power transmitting machinery.

Machines must not be placed so closely together as to be a menace to those who have to pass between them. Passageways must be of ample width and head room and must be kept well lighted and free from obstructions.

All hatchways, elevator walls or other openings in the floors shall be properly closed or guarded.

All premises must be kept clean and in a sanitary condition.

Ample and separate toilet facilities for each sex shall be provided, and toilet rooms must be kept clean and well ventilated, also well lighted.

Food must not be taken into any workroom where white lead, arsenic or other poisonous substances or gases are present under harmful conditions.

Proper and sufficient means or escape, in case of fire, shall be provided, and shall be kept free from obstructions.

Poisonous and noxious fumes or gases, and dust injurious to health, arising from any process, shall be removed as far as practicable.

No employe of any factory, mercantile establishment, mill or workshop shall operate or tamper with any machine or appliance with which such employe is not familiar and which is in no way connected with the regular and reasonable necessary duties of his employment, unless it be by and with direct and reasonably implied commanad, request, or direction of the master or representative or agent.

Reports of accidents causing the loss of fifteen or more days consecutive time must be sent to the state factory inspector between the 15th and 25th of each month and immediate notice of the death of any employe resulting from an accident or injuries must be sent to the same office.

The above synopsis will be printed on card board and the type used will be such as to make it easily legible. It will be printed in English and such other languages as may be necessary to make it intelligible to employes. These notices must be kept posted in a conspicuous place in every office and workroom in every establishment covered by the provision of this act.

DEATH OF L. H. MARTIN.

The announcement of the death of L. H. Martin, an esteemed citizen of Dwight, Ill., was received with sadness by all the people of Dwight and vicinity and by his many friends. He will be greatly missed by all who knew him because of his honorable dealings and his value as a friend.

Mr. Martin went to Dwight in 1884 and purchased the Dwight tile works, which was a small plant at that time, but by energy and fair dealings he worked it up so that now it is a model one. He was a city alderman and a member of the board of education for some time and a prominent member of the K. P. lodge of Dwight.

Mr. Martin was a prominent member of the Illinois Clay Manufacturers' Association, joining that organization in 1893, and missing only three or four meetings from that date. He induced others to join and in later years was accompanied by his sons, both of whom now succeed him in the business.

Mr. Martin was born in Fayette Co., Pa., on a farm, November 27, 1846, and died October 15, 1909, at the age of 62 years. He is survived by a widow and four children.

Death comes to all, in field or hall,
Eternal in its sway.
And high and low, both friend and foe
Shall sink to silent clay.

MASON CITY TILE MAKERS TOO BUSY TO MAKE BRICK.

The brick and tile factories of Mason City, Iowa, have a daily capacity of over 1,000,000 brick, but work has been halted on the new Elks block here because no brick could be secured at any of the eight big local plants. All are so busy making tile that they refuse to manufacture brick, which they sell at less profit. Consequently brick for the Elks' block had to be ordered from Chicago.

ADVANTAGES OF ELECTRICITY AS A MOTIVE POWER IN THE BRICK BUSINESS.*

By C. G. Guignard, Columbia, S. C.

It is almost invariably the case that when an industry is started the managers or founders select methods, equipment, and entire outfit, with the view of economy in cost of product.

But few, if any, manufacturers adopt a particular method, or special apparatus, in their factories from mere fancy, but because they think that their particular selections are most suitable for the most economical production of their wares, although it is often hard to convince all of the advocates of other methods that we are getting the very best.

Particularly with the brickmaker is it necessary for him to look to the most economical systems, though, sad to relate, many of us miss the mark very far at times. But almost always local circumstances or conditions govern us, sometimes against our best judgment, in these matters. As but few of the brickmaking plants of today have been started as a complete whole, their owners or managers have not had to consider at the outset as to whether they would adopt this or that particular equipment throughout the plants, but have added to their plants from time to time as necessity required it, usually in an unsystematic way, until they find themselves with a more or less adequate plant, succeeding to a degree in accomplishing its purpose. But nearly always those who have reared such plants would like today to tear down and rebuild the whole outfit, adopting, in some instances, entirely different apparatus or methods from those they have been using.

We are of this class, and, having had no experience with a plant fully equipped with electric power, are somewhat at a loss as to just how the subject in hand should be treated. However, from a limited experience and a little thought on the subject, we will offer a few thoughts for consideration by those interested.

The general question of using electric power on a brick plant involves other questions. As the successful operation of each part of a well equipped plant depends upon the successful operation of another part, the question of adopting a motive power is also dependent upon the adoption of other methods.

First of all, the advantages of the use of electricity on a brick yard will depend upon the availability and cost of current, for we do not think it would be good judgment to use electric power at a much higher cost than steam, nor would it appear wise to use steam or gas to generate a current for distribution to individual motors about a plant, for generally a plant can be so arranged that the power from a few engines, located not too far from the boilers, will be quite sufficient, and the exhaust from steam engines could be used for drying. Thus in selecting a power drying would have to be considered.

To go backward a little, the accepted most economical way of burning is the continuous kiln, and a model plant should use it, and the ideal continuous kiln utilizes to advantage within itself all of the heat that should be generated there. Therefore, there is no waste heat from this source that might be used for drying. Then drying must be done either by direct firing or from radiated steam heat. Provided more of the heat units from fuel can be utilized through a directly fired dryer than from radiated steam, we think it would be better to use motor power for making and handling rather than steam engines, the electric power being so much more pliable.

The two general methods of drying, by radiated steam heat and direct heat, each have their advantages, which can be better presented by some of our distinguished friends here at this gathering.

It would seem that if a constant electric current can be had at reasonable figures that there are many points in favor of its use. With a constant current ever waiting at the switch, much time and annoyance may be saved.

The method of application, whether to use individual motors for different machines, or drive them all from one common line shaft driven by a larger motor, would be determined by local conditions, but we prefer the individual motor plan, though the first cost of this might be a little higher. A machine for making brick or preparing clay, with a motor attached, is, we think, most desirable. It is very nice to have only to throw in the switch to make things go. The motor requires less attention, deteriorates less, requires less oil, than does other machinery. Each machine may be equipped with its own motor, enabling it to be started and stopped independently. Wiring does not cost a great deal and can be run in close places, around any corner, under ground or overhead, with little loss in transmitting the current. Motors may be set at any angle, on floor, ceiling or wall, and occupy little space. Small motors with cable connecting to wire line can be placed on portable elevators or conveyors and carried to different points for loading and unloading kilns or cars. If it is more convenient to locate a fan or blower at some remote place in the building, wire will carry the current far or near. In connection with mechanical apparatus for handling brick from machine to dryer and dryer to kiln, such as some patented systems, the electric motor for handling cranes is indispensable. A motor-driven transfer for handling small brick cars to and from the kilns is not impracticable. Small motor fans for ventilation in hot kilns in summertime are found very useful. In hauling clay from pit to plant, where any distance is to be covered, there is nothing better than the ever ready trolley system. This may be installed heavy enough for shifting cars loaded for shipping. In operating a shovel for digging clay the motor shovel is far better than steam. Having a constant current, the shovel is always ready to start; no frozen pipe in cold weather; no waiting to get up steam; motor occupies much less space than engine and boiler; there is less upkeep; no water and coal to be hauled to shovel, and fireman's services are dispensed with. No expense is incurred in keeping the fire going between trips or over noon hour. In other words, there is no cost except while actually working. This is the same with all motor installations.

The use of electric current for lighting the plant is, of course, far better than any other system, as well as being much safer. The portable lights on long cords are most convenient about dark kilns or sheds in setting and unloading.

However desirable is a model plant fully equipped with electric power, it should not be thought that its partial use on a plant has no advantages. In many of the details of operation, some of which were mentioned above, one might adopt the electric drive, and reap the benefits therefrom, even though he were not able to equip his whole plant electrically.

As stated above, the plant with which we are connected was not designed for an electrically equipped one. However, in the last few years we have installed several motors, which we find very satisfactory. A motor for driving one brick machine, disintegrator and elevator, two motor-driven exhaust fans, motor-driven triplex pump for supply water for plant and fire protection, small fan motors for ventilation in summer, lights throughout the plant and a motor-driven shovel in clay pit. We have not been

*A paper read before the Twenty-third Annual Convention of the National Brick Manufacturers' Association, Rochester, N. Y., February 1-6, 1909.

able to make all changes that we have wanted, but would like to put in additional electric equipment along other lines when conditions will permit.

SAYS AMERICAN POTTERS WANT ONLY THEIR RIGHTS.

William Burgess, vice-president of the United States Potters' Association, whose presence at a recent hearing of the protest case of L. Straus & Sons, before the board of appraisers, was considered objectionable by the importers, was asked to define his position. Mr. Burgess said:

"The position of the American pottery manufacturers has been so often misrepresented that I welcome this opportunity of stating emphatically that we have no quarrel with any merchant or importer doing an honest and legitimate business, or any purpose of hampering or harassing them in the conduct of such business.

"Our sole and only object is to use every legitimate means of securing the full protection Congress intended we should have under the existing tariff laws. To this end, we offer such information and assistance to the customs officials as we can. We have always found such assistance welcomed by the officials. Now as to my presence at the so-called 'open hearing' in the Straus case I wish to say that this hearing was an 'open hearing' at the request of the importers.

"I felt that I had a perfect right to attend this hearing, as I was deeply interested, and in fact I felt that it was my duty to attend the hearing as a representative of the American pottery manufacturing interests. In this connection I may say that to begin with we were opposed to 'open hearings' for the following reasons, in part:

"First, in many cases the best, and only testimony available is that of importers of similar goods. These importers are naturally reluctant about giving testimony before their fellow importers and cases are known where such witnesses felt it necessary to apologize to their importer for fear that their source of supply would be stopped.

"Secondly, because much of the information secured by the government representatives abroad and at home, is given in confidence, and in certain cases, where the source of the information has been discovered by the importer or the foreign manufacturer, great injury has been the result to the informant."

Mr. Burgess' third point was that the treatment accorded government witnesses by the attorneys for the importers has been, in some cases, so abusive as to make it impossible to secure the attendance of such persons more than once.

He went on to say that open hearings before the board of general appraisers were demanded by the importers in 1907, for the express purpose of knowing all the testimony in the hands of the government. Mr. Burgess stated that although the association protested against these open hearings, they were granted. "Now we claim," said Mr. Burgess, "that the hearings being 'open,' we, as deeply interested parties in the administration of the customs laws, have a right to hear the testimony that will so vitally affect this great American industry."

In conclusion, Vice-President Burgess said: "The attitude of the importing house seems to be preposterous. It having demanded and secured an open hearing, now attempts to dictate to the board of general appraisers who shall attend that open hearing. The importers seem to think that they have the right to say just how far an open hearing will be 'open,' if hearings before the board are to be open, then let them be 'open.' If closed let them be 'closed,' but let there be no uncertainty."

A NEW COMBINATION PUMP EQUIPMENT.

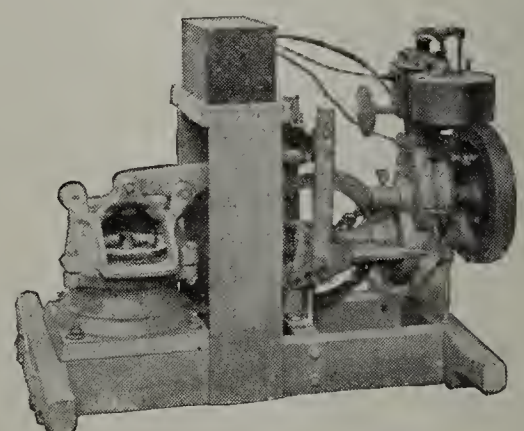
Clay manufacturers and constructors, generally, are familiar with the diaphragm pump and with the gasoline engine, but a portable combination of the two is something new.

This type of pump is constructed for handling dirty water and heavy liquids that would prove disastrous to centrifugal and plunger types.

The outfit is compact and portable. It is mounted, as shown in the illustration, upon a substantial wooden base frame. The combination has been put upon the market by Fuller & Johnson Manufacturing company, Madison, Wis., which manufactures the engines and buys the pumps from a firm which makes a specialty of them.

The engine will exert a pull or lift of 1,000 pounds on the lever at each stroke, giving a wide margin of surplus power, and runs at from 31 to 35 strokes per minute.

The pump is heavy, strong, durable and simple in construction. It has a diaphragm of rubber, which can be readily replaced when worn. The suction valve is rubber-faced, properly weighted, with brass binder, and readily accessible. Pumps are supplied either with bottom or side suction, 3-inch in either case, and can be used with either pipe or suction hose. The capacity is approximately 3,500 gallons per hour.



Diaphragm Bilge Pump Outfit

As to the cost of operating them, the company states that the only expense or attention required is the necessary gasoline and lubricating oil. It says that 10 hours will consume approximately two quarts of gasoline, costing not to exceed 15 cents. A good point about the installation is that it is always there, be it for day shift, night shift or overtime, without any extra expense.

Based upon the statements of the company, this expense stands in striking contrast to the employment of men at $2.00 per day who are not always to be depended upon to be there or continue steadily at their work. The argument against the price of $110.00 for a complete outfit is quickly met by the saving in labor if any amount of pumping is to be done. A pump of this character should prove a valuable asset to the man who makes a business of renting out contractors' equipment or to clay manufacturers who often have to pump out their clay pits.

Other pumping outfits are made by this well known concern as will be seen by their latest catalogue.

SOME MISCREANT GETS IN WORK AT BRICK PLANT IN ZANESVILLE.

Some unknown miscreant placed a charge of dynamite under the piston rod of the engine at the South Zanesville Sewer Pipe and Brick Company's plant, at Zanesville, Ohio, and partially wrecked the mechanism of the engine. John C. Bolen, owner of the plant, has offered a reward of $100 for the arrest and conviction of the guilty party.

The engine has been repaired and is now being operated. The matter has been referred to the police.

PACIFIC COAST NEWS ITEMS.

Notwithstanding the fact that building contracts last month suffered a slight falling off in volume the demand for brick has kept up very well and brickmakers are now disposing of as much of this building material as has been the case in the past few months. In fact the demand may be said to be on the increase for there is a hurry call to get as many structures ready for occupancy manufacturing business, and the chief owner of the new Bricklayers are well employed and the winter season promises to be much more active than has been the case in the past two years. Within the next year the temporary wooden buildings that were erected within the fire limits in the days following the great fire, for store and storage purposes, must be removed and the work of tearing them down has already commenced. As wooden buildings are not allowed to be erected in these districts brick is the material most sought and the prospects are for a steady market for this article for a long time to come. However it is to be noted that while the demand is expected to be good that stocks at the various yards are being kept far in advance of requirements, or expected requirements, and that as far as prices are concerned there is but little likelihood of material advance being made from the present low quotations. While some of the large firms in the business are maintaining the prices that have been in vogue for the summer season it is to be noted that many of the smaller dealers are now cutting the price again and brick is being sold in the local market for less than the cost of production. In closing down their plants for the winter the smaller concerns seem anxious to get rid of all surplus stock in a hurry and are selling for whatever prices buyers are willing to give. The larger dealers are not handling the bulk of the business at the present moment but expect that within a short time the rate cutting will be over for the season. They realize the foolishness of selling their products at less than cost and when these conditions of the market come to the front merely cease disposing of goods for the time being. Brick is being sold in San Francisco at the present time for $6.25 on the water front, which price is admittedly below cost.

There will be but little work done in San Francisco this week for this is Portola Week and for five days the carnival spirit will be ruling. An overwhelming crowd, estimated at a half a million visitors, is now within the city's gates to celebrate the discovery of the Golden Gate by Don Gaspar Portola, but the real joy in the occasion lies in that it is an official welcome on the part of the city to the world on her recovery from the effects of the great fire and the re-establishment of business in the downtown districts again. While brick men will reap no immediate benefits from the holding of the celebration it is felt that anything that can attract attention to San Francisco and her possibilities will benefit them in the end and it is to be noted that brick manufacturers have been among the most generous of the contributors to the Portola fund. It is a source of great satisfaction to them to hear the admiration of the crowd expressed at the magnificent buildings that now grace the city and there is no doubt but that the changed opinions in regard to actual conditions here will be of great benefit to San Francisco.

The California Brick Company has been working steadily on the development of its holdings near Niles, Cal., and is just now completing the erection of a large coal burning continuous kiln. This plant will be ready for operations on a large scale by the first of the year and already has some large orders for its products on hand, the product of the plant being a very superior one.

The plant of the Monterey Pressed Brick Company of Monterey, Cal., is not in operation now and will not be reopened until a permanent site elsewhere is selected. A representative of the company has been looking over the ground at Sacramento, and a site is being negotiated for on the water front there where sand from the American river is easily secured and where water transportation is handy.

The brick trade of this city was greatly shocked recently to learn that T. W. Tetley, a prominent man in the brick and terra cotta works at Livermore, Cal., had committed suicide. The unfortunate man had been in extremely ill health for some time with but little prospect of recovering and preferred death to the life of an invalid.

Mr. Edward Orton, state geologist of Ohio, and a well known ceramic expert, has been visiting in California and has spent considerable time in San Francisco and vicinity. While here he paid a visit to the extensive works of Gladding, McBean & Co., at Lincoln, Cal., and was much impressed with the possibilities of that district. While there he was entertained by L. P. Singer, who is connected with the terra cotta works of Gladding, McBean & Co., Mr. Singer being an old friend of his.

Work on the new sewer system at Elmhurst, Cal., has been stopped owing to a technical mistake in the map of that city and the legality of the bond issue will have to be tested before construction work can be resumed. It is not believed that the mistake will invalidate the bonds and the contractors are expecting to be ordered to go ahead with the work shortly. N. Clark & Son have contracts for furnishing a large amount of the sewer pipe that will be used in this sanitary district.

While investigating a sulphur mine in the vicinity of Mount Lassen the mining experts discovered a bed of very fine pottery clay and in the advent of a railroad being built to the sulphur deposits the clay deposits will also be worked.

A plant for the manufacture of tile is being erected at Colfax, Wash., by J. Fowler, who was formerly in the business at Fowler, Ind.

The Western Glazed Cement Pipe & Machinery Co. has been incorporated in San Francisco with a capital stock of $30,000 by W. A. Curless, R. F. Shuey, D. H. Jarvis, C. H. Pusehmann and H. B. Hoyt.

The Patent Brick Company, of San Francisco, is not operating its plant at the present time owing to the low price of brick and has sufficient brick on hand to last until the spring season commences.

The Tucson Pressed Brick Company, of Tucson, Ariz., has been quite busy of late and the plant has been running on full time. Several large lots of brick have been disposed of in Phoenix, Ariz., and it is intended to establish a branch office there to care for the business of that city.

BUY BRICK FOR PACKING PLANT.

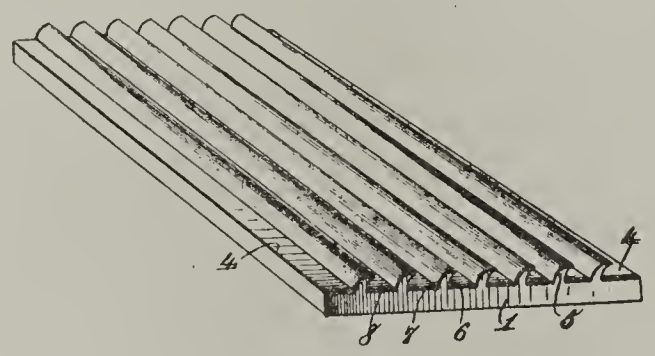
The Cleveland Brick Company of Cleveland, Okla., which is owned by Oklahoma City men, has closed a contract with the Morris & Company packers, to furnish 8,000,000 brick for the packers' big $3,000,000 plant. The company's various concrete tools have been shipped from Chicago and will be in the hands of A. J. Agnew, construction engineer, in a few days. Sidney L. Brock, president of the chamber of commerce, received a letter from Thomas E. Wilson, the vice-president of the Morris & Company packers, saying that there was no cause for further delay in the construction of the packing plant and work will proceed at once.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

927,869. Tile. Joseph R. Miller, Morgantown, and Ulysses S. Huggins, Weston, W. Va.; Margaret M. Miller administratrix of said Joseph R. Miller, deceased. Filed Aug. 29, 1907. Serial No. 390,673.

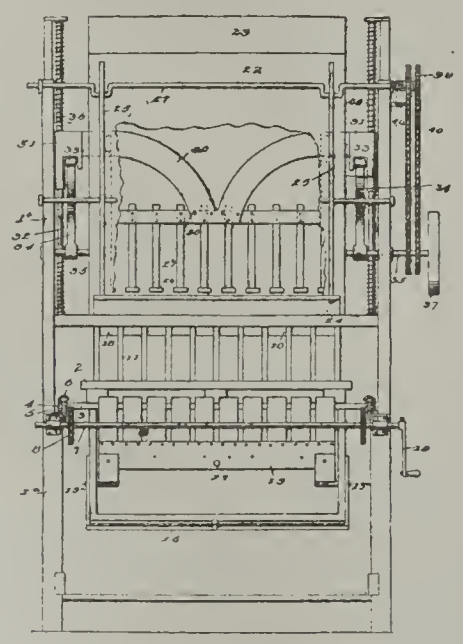
A tile comprising a rectangular body of equal thickness throughout its entire area and having its inner face provided with a plurality of key projections extending longitudinally thereof fully from end to end, each of the key projections having opposing concave and convex faces, the convex faces being longer than the concave faces and all of the projec-



tions being reduced gradually from a maximum base formation to the free ends to form sharp edges or beaks which overhang the several pockets provided between the projections, the portions of the free ends of the key projections immediately in advance of the sharp edges presenting convex surfaces which in the aggregate produce a smooth back portion for the tile and prevent catching and breaking of the reduced edges.

928,913. Brick-Machine. George M. Griswold, Kingman, Kans. Filed April 24, 1908. Serial No. 429,073.

In a machine of the character described, the combination of a pallet, guides carried by the pallet, members slidably mounted upon the guides, ends carried by the said members for two sets of molds, the said ends being adapted to be lowered into an inoperative position, a common

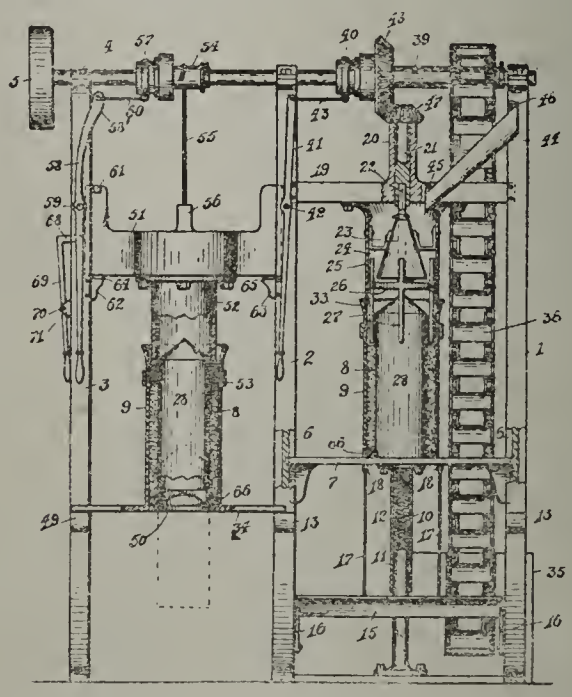


set of sides for the molds, and means for bringing the sides into cooperative relation with either set of ends.

In a machine of the character described, the combination of a supporting frame, a mold, a pair of hoppers mounted upon the supporting frame, slides mounted to reciprocate across the discharge openings of the hoppers to control the supply of plastic material to the mold, a tamping mechanism mounted between the hoppers, and gearing connecting the tamping mechanism and the slides.

928,812. Machine for Making Concrete Tiling. Ransom Z. Snell, South Bend, Ind. Filed July 21, 1908. Serial No. 444,588.

In a machine of the character described, a frame, a continuously rotating shaft mounted in the frame, a vertically movable table mounted in the frame, means for holding the table normally at its upper position, a hopper mounted above said table, a mold disposed upon the table beneath the hopper and movable with the table, a friction clutch on said shaft including a sleeve, a storage bin, an endless conveyor working over said sleeve and entering said bin to lift the material from the bin and carry it to the top of the machine, a chute disposed at the upper end of the machine to receive the material from said conveyer and deliver it to the hopper, to move the hopper and its table downwardly against the action of the means which holds the table normally in its upper position, a



manually operable means arranged whereby said table may be drawn to its lowermost position independently of the weight of the material in the mold, a stationary platform to receive the mold after it has been filled and the table moved to its lowermost position, and a tamping device operating above the stationary platform to effect a tamping of the material in the mold.

921,838. Composition of Matter for Use in Fire-Brick and the Like and Process of Producing the Same. Luke Houze, Monterey, Cal., assignor of fourteen-sixtieths to Charles F. Niklaus, fourteen-sixtieths to R. H. Willey, and one-sixtieth to Arthur Branquart, Monterey, Cal. Filed Aug. 27, 1906. Serial No. 332,287. Renewed Mar. 30, 1909. Serial No. 486,816.

A composition for use in a fire brick consisting of about twenty-one parts of fire clay binder with about seventy-nine parts of a filler consisting of hydrophane which is roasted and crushed to a state of coarse division.

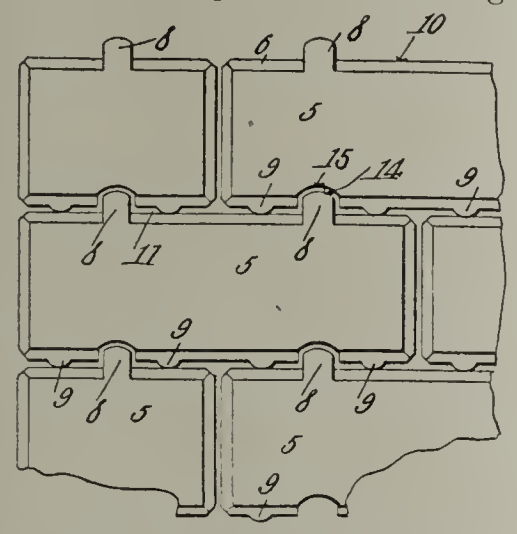
A composition for use in a fire brick consisting of about twenty-one parts of fire clay binder with about seventy-nine parts of a filler consisting of a rock of substantially the composition stated which is roasted and crushed to a state of coarse division.

The method of making fire brick which consists in roasting hydrophane, crushing the product to a state of coarse division, mixing the same with fire clay, and then molding and burning the mixture.

The method of making fire brick which consists in roasting a rock of substantially the composition stated, crushing the product to a state of coarse division, mixing the same with fire clay, and then molding and burning the mixture.

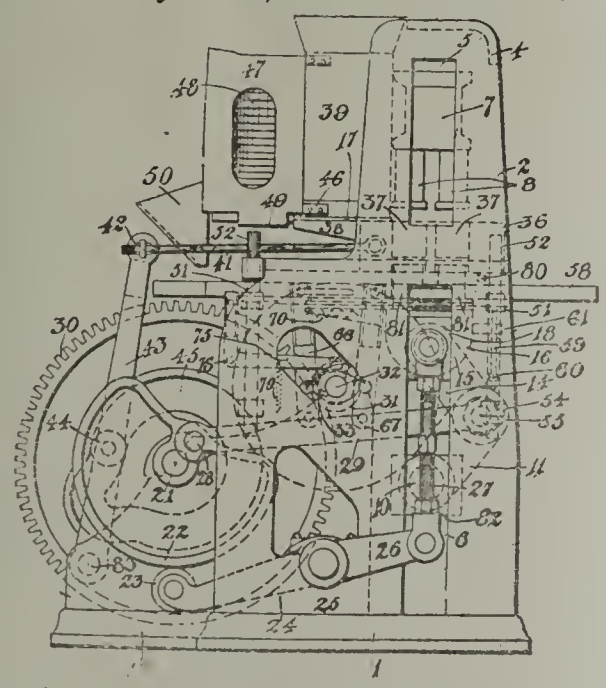
929,210. Street-Paving Brick. Frank W. Grebe, Philipsburg, Pa. Filed Feb. 8, 1909. Serial No. 476,740.

In road-bed construction, a plurality of bricks or blocks laid to break joint and each provided with a vertically disposed tongue adapted to enter a corresponding seating groove formed in an adjacent block, said blocks being formed with circumferential mortar-receiving grooves, and a spacing member secured to each block and arranged to bear against an adjacent block to produce an intermediate channel for the reception of a binding medium.



In road-bed construction, a plurality of reversible bricks or blocks each having one side thereof provided with spaced vertically disposed seating grooves and its opposite side formed with vertical locking tongues, ribs formed on the grooved side of each block; there being a circumferential mortar-receiving groove formed in each block and intersecting the vertical seating grooves and spacing ribs, respectively, said bricks or blocks being laid to form a road-bed with the tongues of one block entering the grooves of an adjacent block and with the ribs bearing against said mating blocks to produce an intermediate channel for the reception of a binding medium.

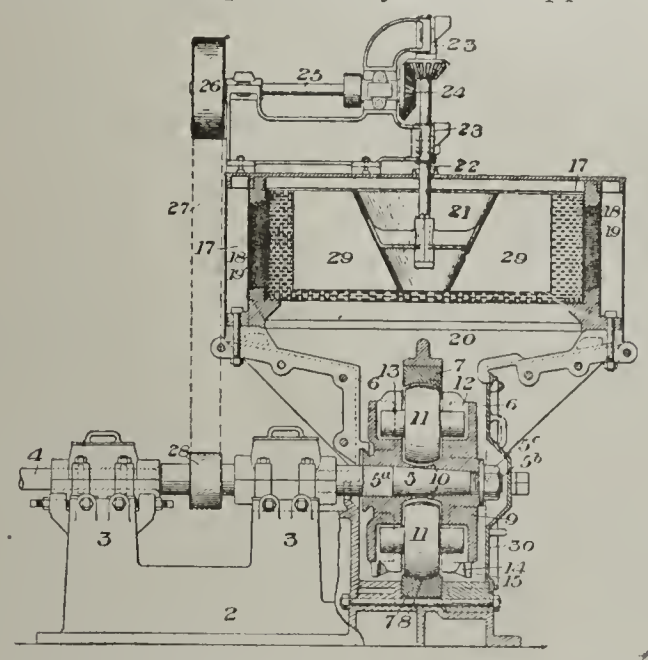
930,053. Brickmaking-Machine. Orvis G. Diefendorf, Binghampton, N. Y., assignor to International Brick Machine Company, Binghampton, N. Y., a Corporation of New York. Filed June 4, 1907. Serial No. 377,131.



The combination of a frame, an upper plunger movably mounted in the frame, a lower plunger movably mounted in the frame, a mold adapted to be held stationary between the plungers, means for compressing material in the mold by a downward motion of the upper plunger, means for retracting the lower plunger, means for delivering the molded material from the mold by a further downward motion of the upper plunger, means whereby a pallet, or other conveying device, may be inserted below the mold after the lower plunger has been withdrawn from the mold, and means for lowering the pallet or other conveyer with the molded material resting thereon while delivery from the mold is taking place.

928,368. Crushing or Pulverizing Machine. Charles A. Dorn, John O. Ludlam, and Charles F. Bonnot, Canton, and Louis C. Bonnot, Louisville, Ohio, assignors to The Bonnot Company, Canton, Ohio, a Corporation of Ohio. Filed Aug. 25, 1908. Serial No. 450,242.

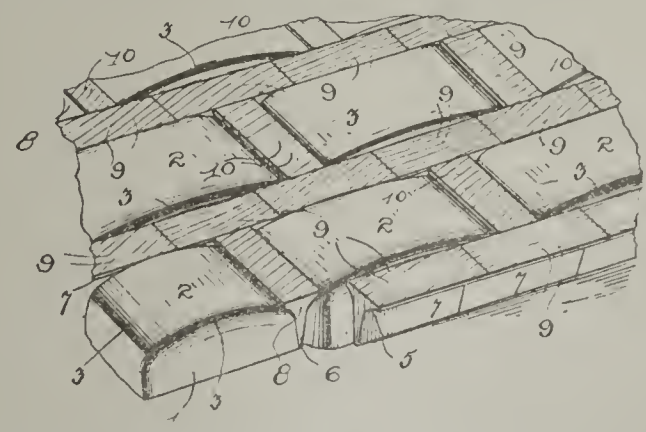
A pulverizing machine, having a reducing chamber, a screen chamber above the reducing chamber, reducing means in the reducing chamber arranged to throw the reduced material directly upward into the screen chamber, an inverted cone shaped rotary feed hopper extending



centrally downward within the said screen chamber and having a central discharge at its lower end, deflecting blades secured to said hopper, and means for rotating said hopper and blades, the outer inclined surface of the hopper also forming a deflecting surface; substantially as described.

A rotating carrier for the grinding rolls of a pulverizing machine, said carrier consisting of an integral casting having a plurality of bearing seats for the grinding elements, and having rearwardly inclined U-shaped scoop portions in the form of pockets extending inwardly into the body of the carrier intermediate said seats; substantially as described.

929,366. Pavement. Edward Alcott, New York, N. Y. Filed May 25, 1909. Serial No. 498,295.



A pavement comprising a plurality of blocks, wooden keys adapted to be interposed between the meeting ends and sides thereof, said keys having their grain running transversely of the direction of traffic so that the top surfaces of said wedges will be spread over adjoining blocks.

A device of the character described comprising a wedge shaped wooden key adapted for insertion between meeting faces of paving blocks with its grain running transversely to the direction of traffic so that the top surface thereof will be spread over said blocks.

CLAY RECORD.

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CLAY RECORD PUBLISHING COMPANY

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GEORGE H. HARTWELL, EDITOR

SUBSCRIPTIONS

Send One Dollar bill or stamps for United States or Mexico and one dollar fifty cents for all other foreign counties.

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Vol. XXXV. OCTOBER 30, 1909. No. 8

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

Only a hustler can get the key to the door of success.

Every time a chronic kicker stubs his toe he imagines the world is against him.

Subscribe for the CLAY RECORD this month. You can get it from now until 1911 for one dollar. Attend to this at once.

When your superior gives an order, the thing to do is to carry it out. If the order is wrong you will not be to blame, but your superior will suffer.

If you go home from business at night and forget the things you have been doing in the day and use your time for things in life outside of business, the next day you can make things fly.

Now is the time that you should consider the increasing of your advertising. Make your advertising appropriation as large as possible for 1910 and do not forget to put the CLAY RECORD on the list.

It is quite an art to know when to make the get-away after you have made the sale. Study your customer carefully, and when you have made your point clear and your proposition is presented in the best possible manner and accepted, then get away.

The best business getters are those who get business on business grounds and through their knowledge of the business, rather than through their ability to tell stories, order good dinners and drink the most.

The director of operation and maintenance of the Harriman lines says that reports show that traffic for October will far exceed that of October, 1907, which was the highest water mark ever reached. This is an indisputable sign that the country has recovered from the industrial depression.

BRICK AND TILE INDUSTRY

The report of the United States Geological Survey on the clay-working industries in 1908, just issued, shows that the total value of the brick and tile products, which include brick of all kinds, sewer pipe, architectural terra cotta, fireproofing, hollow building tile or blocks, stove lining, and all kinds of tile, was $108,062,207, a decrease of a little over 16 per cent from the value for 1907. Every state and territory contributed to the 1908 total. Ohio was the leader, reporting products valued at $15,915,703, or 14.73 per cent of the whole. Pennsylvania, which has heretofore been the leading producer of these wares, was second in 1908, reporting products valued at $13,566,479, or 12.55 per cent of the total. Illinois was the third state in value of products, reporting $10,752,160 worth of brick and tile products, or 9.95 per cent of the whole. No other state reported brick and tile wares valued at as much as $10,000,000, New York being fourth with $7,270,981.

COMMON BRICK

Common brick is the most valuable of all products of clay, those for 1908 being valued at $44,765,614, or 41.43 per cent of all brick and tile products. In 1907 the common brick product of the country was valued at $58,785,461, so that the decrease in value was nearly 24 per cent. The number of common brick reported was 7,811,046,000, compared with 9,795,698,000 in 1907, a loss of 20.26 per cent. The average price per thousand at the kiln decreased from $6 in 1907 to $5.73 in 1908. Illinois is the largest producer of common brick, reporting 1,119,224,000. These brick were valued at $4.32 per thousand. New York, while second in production, was first in value of product.

VITRIFIED PAVING BRICK AND DRAIN TILE

The most striking features of the report are the decrease in every variety of product except two, vitrified paving brick and drain tile. Vitrified paving brick showed a gain of 101,877,000 in quantity and $1,003,193 in value, an increase of 11.63 and 10.39 per cent respectively. The average value for this variety of brick was $10.90 per thousand in 1908 and $11.02 in 1907. Ohio is the leading producer of this variety of brick, reporting 327,718,000 in 1908, valued at $3,232,335, or $9.86 per thousand; this represents 33.50 per cent of the entire product and 30.33 per cent of the entire value.

The drain-tile industry flourished in 1908, notwithstanding the depression in other branches of trade. The total value of this product was $8,661,476, a gain of 26.18 per cent over 1907. Iowa, Indiana, Ohio, and Illinois were the leading producing states. These four states with Michigan reported 90 per cent of the total product. The use of drain tile is spreading, 39 states reporting it in 1908.

All other important products showed large decreases in value of output except sewer pipe, which showed the comparatively small decline of $479,114, or 4.17 per cent. The value of this product in 1908 was $11,003,731.

OBITUARY.

L. H. Martin, a well known brick and tile manufacturer at Dwight, Ill., died at his home October 15th. He leaves a wife and four children.

J. H. Smith, a representative of the National Drain Tile Co., of Terre Haute, Ind., committed suicide at Mattoon, Ill. The body was buried at Monticello.

T. W. Loveland, a dealer of brick at Milwaukee, Wis., died at his home, 301 Sixteenth avenue, after a short illness. He was 42 years of age, and is survived by a widow and two sons.

Frederick E. Frey, seventy-three years old, and at one time the head of the Frey-Scheckler Co., of Bucyrus, Ohio, died at his home in Cleveland, Ohio, where he had been living for the last ten years.

William H. Hahne died at his home in Chicago, at 2912 North Robey street, following an illness of several years. He was 46 years of age and for many years was a north side brick manufacturer. He was president of the Artificial Ice Co., and the Northwestern Brewing Co.

FIRE! FIRE!! FIRE!!!

The plant of the Barton Lumber & Brick Co., Jonesboro, Ark., valued at $190,000, was totally destroyed by fire. The loss is partly covered by insurance.

The Onondaga Pottery Co., Syracuse, N. Y., sustained a $20,000 loss by fire at their works on West Fayette street. The loss is entirely covered by insurance.

The Empire Brick & Supply Co., across the river from Coxsackie, N. Y., suffered a loss by fire of the burning of the sheds to their brick plant. They will be replaced at once.

The entire plant of the Corinth (Iowa) Brick & Tile Co. was burned to the ground, causing great loss to the owners and the city. The cause of the fire is unknown, Only small insurance.

The Monroeville (Ohio) Brick & Tile Works, owned by Hess & Smith, was destroyed by fire, causing a $12,000 loss, which was partly covered by insurance. The plant will be rebuilt at once.

The plant of the Central Georgia Brick Co., at Macon, Ga., was destroyed by fire, causing a loss of $20,000, partly covered by insurance. The plant was a new one owned by Dr. J. F. Farnham, J. F. Hart and Brad Wall. They will rebuild at once.

NEBRASKA CAPITALISTS BUY SIOUX FALLS PLANT

The Sioux Falls Pressed Brick Co., which has been such a successful institution in Sioux Falls, S. Dak., under the management of the Johnson Bros., has been sold to a syndicate of Nebraska capitalists, and, as it will bring many new people to this city, it is probably a good thing, for the Johnsons are a permanent fixture and the sale means they will be investing their money in other institutions. For some time one of the buyers has been interested in the plant here and finally decided he wished to come here and live, so secured an option on the stock and took it all in conjunction with some friends.

As the people who will have the business in the future are said to be live men and have plenty of capital, not only for this enterprise but others, it will undoubtedly be a good thing for this city that they are casting their lots here.

ACCIDENTS, DAMAGES AND LOSSES.

The Sibley (Mich.) Brick Co. is being sued for $12,000 said to be due to Carl J. Sandstrum, an ex-manager of the plant.

Thomas Cochran of Vanport, Pa., was seriously injured by the breaking of a kiln band at the plant of Dando & Co. A portion of the kiln fell upon him.

Jacob Franke, a laborer, aged 70 years, was caught by falling clay so that he died from injury at the plant of the Glen-Gery Brick Co. works at Shoemakersville, Pa.

William Jones, a negro, was killed and John Dominick badly injured at Philip Goldrick's brick plant, Goldrick's Landing, near Kingston, N. Y., by a kiln falling upon them.

William Lewis secured a verdict of $5,000 in the circuit court for injuries received while at work in the brick plant of the Detroit Vitrified Brick Co.'s plant at Corunna, Mich.

The supreme court at Albany, N. Y., gave a verdict of $6,500 to Rosanna Palin against the Cary Brick Co. of Cohoes, N. Y., for the death of her husband, who was killed while working at the plant several years ago.

F. J. Hanlon has been appointed receiver for the Latonia (Ky.) Brick Co. in a suit filed by a Covington bank and other creditors. The company asks that the receiver be allowed to borrow money and operate the plant. The liabilities are about $20,000.

Some unknown miscreants placed a charge of dynamite under the piston rod of the engine at the South Zanesville Sewer Pipe & Brick Co.'s plant at Zanesville, Ohio, and partly wrecked the engine. John C. Bolan, the owner, offers a reward for the conviction of the guilty party.

$350,000 BRICK MANUFACTURING ORGANIZATION EFFECTED IN CANEY.

One of the biggest deals in the history of Caney, Kansas, has been closed, in which the Kansas Brick & Tile Company, incorporated for $350,000 was organized to manufacture brick, tile, electricity and possibly furnish another gas line for Caney use. The deal is the outgrowth of the Monarch Brick and Tile Company and is organized by local and Kansas capitalists. It will operate on the 350-acre McIntyre farm at the northwest edge of Caney and when completed will employ 250 to 300 men.

The charter has been returned and an organization effected. S. M. Porter was elected president; W. O. Trusket, secretary; W. S. Cochrane, treasurer, and H. B. Wiley, Kansas City, general manager. Offices will be opened in Caney.

The deal is the outgrowth of the old Monarch Brick & Tile Co., of which several efforts were made to organize, but all were unsuccessful until the present one. The old McIntyre farm, of 350 acres, with splendid clay for brick and tile purposes in unlimited amounts will be the location of the plant. Building brick, common brick, paving brick, tile and other products of similar nature will be manufactured. The charter also grants the privilege of maintaining an electric plant, which is needed in the production of certain lines. A service may also be given Caney and surrounding territory. The company will use its own natural gas to burn, drawing from wells of their own on that and adjacent lands.

LOCATION OF CLAY BEDS IN PROVINCE OF NOVA SCOTIA.

Sackville.—Professor Keele, of the Dominion Geological Department, and Porfessor Ries, who holds the chair of Economic Geology at Cornell University, have this summer been engaged in what may be called prospecting for clay. The two in company have traversed Nova Scotia and inspected the more noteworthy agrillaceous deposits in that province. Professor Ries has now gone to Prince Edward Island to continue his investigations in that direction and Professor Keele is following suit in New Brunswick. The mission on which these gentlemen have been sent out by the Dominion government has for its object to ascertain the location of the more important provincial clay-beds and to secure samples of the clay. These are forwarded to Ottawa and thence to Cornell University, where they will be carefully analyzed and tested by Professor Ries, who will thus be enabled to determine their fitness for industrial purposes, one species of clay, as it seems, being suited for making fire brick, another for ordinary building brick, another for pottery, etc., etc. Full information on all these points, including detailed analysis, will be published by the government and thus rendered accessible to all those interested in such lines of manufacture as those alluded to above. The economic value of the services thus rendered to the industrial world cannot be overestimated. Professor Keele will have forwarded from Sackville samples of a very superior clay obtained in the vicinity of Ogden's mill pond, and of a still finer clay from the farm of William Chase of Fairfield. Although Sackville is too generally regarded as just an aggregation of sand-dunes, stigmatized, indeed, by the late Charles Pelham Mulvaney in one of his sonnets as a "barren, sand-strewn reach," yet it is worth knowing that underlying the sand in many places and cropping out here and there are immense beds of clay that have as yet been practically unutilized. Professor Keele's visit to Sackville may, therefore, bear valuable fruit some day. The Professor was much interested in the institutions, notably so in the Art Building and its contents. He expressed the opinion that in all Canada there was no such art collection as this accessible to the public, and that in its water colors it compared very favorably with the famous Kensington Art Museum in London—an opinion all the more valuable from the fact that he was born and brought up on the other side of the water, and like Ulysses of old, has seen "many men and many cities," having the advantage, however, of that hero in having visited many art galleries.

DRAINED LANDS IN ILLINOIS ARE PRODUCTIVE.

Bumper crops of corn grown this season on the 4,500 acres of farm land drained by the big Rutland-Plato ditch have sent the price of property abutting the improvement from $80 to $130 per acre, and indirectly set the farmers of all northern Illinois to thinking about the possibilities of redeeming swamp acreage, says the Elgin News.

Through the two Kane county townships which the big drain cuts, the biggest crops of corn even in this country have been raised. Land that for years and years has been covered eleven months of the year with water, this fall shows the highest and most productive corn in Kane county.

The radical increase in the price of land along the drainage ditch has been almost unexpected. Recently the first farm offered for sale on the ditch was sold. It brought $130 per acre. Ten years ago it was offered for $80 the acre and wasn't sold. And the ditch cost less than $10 for every acre abutting it.

FREDERICK E. FREY DEAD.

Frederick E. Frey, seventy-three years old, one time a well-known Bucyrus manufacturer, died the morning of October 21st, at his home, No. 10403 Colonial avenue N. E., Cleveland, Ohio. Mr. Frey has been living in Cleveland for ten years and had he lived until next month he would have celebrated the fiftieth anniversary of his marriage.

Mr. Frey was one of the founders of the Frey, Sheckler Company, manufacturers of brick and clay-working machinery at Bucyrus. This company was merged into the American Clay Working Machinery Company.

Mr. Frey is survived by a wife and eight children: John, Ernest, Cecilia, M., Rowena, Mrs. W. W. Wallace, of Canton; Mrs. G. C. Merrell, of Willoughby, and Mrs. G. H. Matchett.

UNIONS VOTE DOWN OVERTIME REQUEST.

Requests that the sanitary pottery employes make another mold each day, thus increasing the output of the various sanitary plants in Trenton, N. J., has been voted down by the unions.

The proposition was submitted at a meeting of the men, when about 200 mechanics considered the question. It was agreed that the matter might be further discussed at a subsequent session, inasmuch as a full representation was not present.

Several of the workmen, it is said, favored the concession, on the ground that there is at present an increasing demand for sanitary ware, of the sort made in Trenton. One more mold per day per man would more than make up an extra day's output in every factory and thus take care of a part of the present extraordinary demand.

The manufacturers, however, contend that they are not pressed beyond the customary facilities. They say that certain lines are selling fairly heavily and that in certain of the plants it would be an advantage if the men would make the requested extra mold per day.

PAVING BRICK PLANT AT PISCATAWAY.

The New Jersey Clay Products Company, of New Brunswick, N. J., of which Charles A. Bloomfield is the treasurer, is rapidly getting its Piscataway plant in shape and within less than six months the plant will represent an outlay of capital of more than $125,000. This will include the present hollow brick plant and a plant for manufacturing a shale paving block, much on the order of the Metropolitan or Bessemer blocks.

The capacity when running full will be about 110,000 blocks or 140,000 brick per day and the plant will be capable of turning these out within six weeks. It will furnish altogether employment for about 200 men.

The plant at present has the best of shipping facilities, lying along the Raritan river and having a spur of the Lehigh Valley Railroad.

A plant in the vicinity, capable of manufacturing a first-class paving block, will be a great boon to New Brunswick, as the city will be able to get its paving material at a great deal lower cost than at present. The freight on the brick at present used here is about $12 per 1,000, or more than a third of the entire cost.

At present there is no manufactory of the kind in this section but the Pyrogranite works, which went out of existence some time ago, furnished the brick which made the most satisfactory pavement New Brunswick has yet had, that on the Bayard street hill. These blocks were a white clay brick while the new ones will be shale.

Mr. Bloomfield says that he feels sure the company will be able to furnish a first-class paving brick in a short time.

THE ALLIANCE BRICK COMPANY NOW READY TO DO BUSINESS.

The organization of the Alliance Brick Company, Alliance, Ohio., has been perfected by the election of a board of nine directors and the adoption of a constitution, etc. The board elected consists of the following: F. A. Hoiles, W. H. Purcell, Ross Rue, Fred Zurbrugg, D. W. Crist, F. A. Sebring, W. W. Webb, R. M. Scranton and I. Koch.

The organization of the board was later completed by the election of the following officers: F. A. Hoiles, president and general manager; D. W. Crist, vice-president; R. M. Scranton, secretary; W. W. Webb, treasurer. An executive or building committee will be chosen among other business at a meeting of the board to be held next Saturday morning.

The Alliance Brick Company has been in process of organization for eight months, during which time five different sites for the establishment of a paving and face brick plant have been investigated. From four of these at different times during this period large quantities of material have been taken, and three at least of these four have been found to make high grade pavers and face building brick. The site most favored by the company at present is the Fred Zurbrugg farm lying just north of the P. Ft. W. & C. railroad, about one and one-half miles east of Alliance, midway between Alliance and Sebring, affording excellent local markets, and, with the Alliance-Sebring road paved, exceptional facilities for reaching same; and the Pennsylvania system will provide a means of reaching every other desired market.

It is the intention of the company to immediately erect a strictly modern plant, designed by the best brick works engineers of the present day. This plant will have a capacity of about 50,000 pavers. It will cost about $75,000 or $85,000, and the money to pay for same has all been subscribed and ten per cent of every share paid into the hands of the treasurer of the company.

PORT CREDIT COMPANY EXTENDING PLANT

The Port Credit Brick Works at Port Credit, Ontario, are just completing another large extension to their working plant by the erection of six additional kilns, which have involved an expenditure of $35,000. Twelve more similar kilns are planned, but their erection will be deferred to the spring.

The engineers in charge of the construction of the canal at the brick works are now engaged in blasting operations on the lake front for the purpose of deepening the basin at the point where the mouth of the canal, or rather the first lock in the latter, will be, when the work is completed. This work will have to be effected before there will be sufficient depth of water to allow vessels of any draught to pass in or out. The engineers do not expect to be able to let the water into the canal in much less than six months' time.

There are now more than three hundred men employed at the brick works and on the canal excavations, and many more will be so soon as the latter is opened, so it will be seen how important a matter it is to the prosperity of the village that this work should prove successful.

WILL ESTABLISH SCHOOL TO TEACH BRICKLAYING IN TEXAS.

A school for instructing apprentices in the bricklayer's trade, which will cost $50,000, will be located by the delegates of the nineteenth convention of the Texas Bricklayers' Association recently, which opened in Galveston October 25. Many cities were applicants for the school. George M. P. Anderson, of Dallas, presided. Secretary W. J. Moran, of Fort Worth, announced every local represented.

OCTOBER MEETING OF HUDSON RIVER BRICKMAKERS.

A meeting of the Hudson River Brick Manufacturers' Association was held October 27th in The Palatine, Newburgh, N. Y. It is usual for the association to have a meeting in October of each year to talk over the situation and see if anything can be done to improve it, if the condition of the trade is at all bad. This time, it is said there were no very important questions to come up for settlement. The price of brick is about $6 a thousand and there is not a very large supply on hand. It was hoped, therefore, that at this meeting action might be taken toward raising the price of brick, which is usually higher in the winter than in the summer.

There were about sixty brick manufacturers present. William K. Hammond of New York City, is the president of the association, and Robert T. Boyd is the secretary. They were both present, and the following were among the others who attended: Frank de Noyelles of Haverstraw, Alonzo Rose of Catskill, Alexander Rose of the Reilly Brick Co., of Stony Point; John Shankey, of P. Shankey & Son of Haverstraw; Senator John B. Rose of the Rose Brick Co.; B. J. Allison of B. J. Allison & Co., of Haverstraw; Theodore G. Peck of West Haverstraw, and E. S. Emmons.

THE NEW YORK BRICK MARKET.

Following is the report of the condition of the New York brick market for the week ending Saturday, October 30. Five barges were left over from last week and seventy-nine arrived, making eighty-four in all. Seventy-nine have gone out leaving ten on hand. Prices range from $5.25 to $5.75, which is high and very hard to get. Things are looking better and it is the general opinion that we may soon have a $6 market.

LOUISVILLE CAPITALISTS ORGANIZE A $200,000 CLAY PLANT FOR WEST VIRGINIA.

Louisville capital has broken into the clay products industry of West Virginia in the organization of a $200,000 company recently in Charleston.

While factories manufacturing tile, pressed brick and general pottery commodities have been in operation for many years in Ohio and West Virginia points along the Ohio river, including Youngstown, East Liverpool, Wheeling and Parkersburg, the company just formed in Charleston will be one of the largest of its kind in the United States, and one of the only ones owned by Louisville capitalists.

The officers of the new concern are all Louisville men, and the standing of the organizers assures success for the new undertaking. At a recent meeting of the company's directors the following were elected executive officers: W. E. Caldwell, president; A. H. Robinson, first vice-president; Sam P. Jones, president of the Commercial Bank and Trust Company, of Louisville, second vice-president; R. H. Yates, of the Yates-Smith Whisky Company, secretary and treasurer.

The men who are interested in the success of the new company will go to the West Virginia city within the next few days for the purpose of perfecting arrangements to start manufacturing. The new potteries plants will be in full operation within the next sixty days, it is said, and shortly after they will be shipping finished goods to the trade.

Recognizing the value of river transportation, and the low shipping rates existing between points on the Ohio river, the new company will make Louisville a selling ground for all of the goods turned out in the new plant.

JACKSONVILLE WILL AT LAST GET A LARGE BRICK YARD.

Before another building season gets around Jacksonville Illinois, is to have an up to date brick yard. The yard will be owned and managed by the Tendick Brick Company, and it is expected that the plant will be in operation early in the spring. The company includes F. H. Thies, Frank and George Tendick, all of whom are practical brick makers and good business men. The yard will be located on land just south of William Tendick's yard, near the corner of Tendick street and Morton avenue. Soft mud sand brick will be manufactured and the drying will be done in tunnels heated with a furnace. The tunnels will be eight in number, 75 feet in length, and the brick will be run from the machine into them loaded on cars bearing a series of racks. The drying process will take about 48 hours and the cars will then be moved into the kilns and placed in position for burning. For burning purposes two clamp kilns will be built, each holding upward of 100,000 brick. Permanent kilns may be installed later. The first expense for the plant, including machinery and installation, will be about $10,000. The contract for the work has been let to D. C. Carson. During recent months various clays have been tested by Messrs. Theis and Tendick and the site selected furnishes the very best material they could find.

A good many brick yards for Jacksonville have been talked about during the past year or two, but this one is a go and the work is soon to commence. As the men interested are all familiar with the business, having had plenty of experience and as there is a good market here for brick the new enterprise will undoubtedly succeed. The addition of the enterprise to Jacksonville will be very welcome.

CONTRACT SIGNED FOR THE LOCATION OF AN IMPORTANT INDUSTRY.

W. S. Cochrane, secretary of the Gas Belt Brick Co., recently visited Pawhuska, Okla., and made a contract with the Pawhuska Oil and Gas Co., for fuel for a new brick plant to be erected in that city with a capacity of 100,000 brick per day.

The plant will occupy fifteen acres of land with its activities and its products will include not only building brick but a re-pressed face brick and tile. It is expected that fully seventy men will be given employment. The fuel rate to the company was not ascertained but Mr. Cochrane says that it is entirely satisfactory to his company. The exact location of the plant will not be known until certain tests, now being made are completed.

The Gas Belt Brick Co. is a corporation composed largely of Kansas men. It has a capitalization of $750,000 and the probability is that its Pawhuska plant will grow. The same company has taken the initial steps to the erection of a similar plant at Henryetta. The people of Pawhuska are to be congratulated on this beginning of an industrial development that promises to be very extensive in the end.

BRICK PLANT CASTS ASIDE OLD POWER TRANSMISSION

The Alton Brick company's plant on the north side at Alton, Ill., is now being operated completely by electricity, so far as the various machines are concerned. An electric plant capable of developing 800 horse power is being used to supply the electric current and the power is carried about the plant on wires and delivered at each machine to individual motors which are on the shafts. All the old methods of power transmission have been abandoned. The plant is now running in full with electrical power with no belting and no long shafts to drive the machines.

BRICK BEST AND CHEAPEST FOR FLORIDA.

The more that proposition for the construction of a system of vitrified brick roads throughout the county is discussed, the stronger does it appeal to the people. savs a Florida journal.

The money of the taxpayers could not be employed in any manner that would contribute more materially or more immediately to the development of the county than by this method. Vitrified brick is the only thoroughly satisfactory paving material that has so far been employed in this section. In the matter of first cost it of course considerably exceeds the other materials which have been used on our streets and roads, but when the repair bills for a few years are taken into consideration the brick proves cheaper than any of the substitutes.

And in the matter of saving on vehicles, the heavier loads that may be hauled on the smoother road, the absence of dust and mud, and the consequent elimination of the cost of oiling, brick is incomparably superior.

Duval county is preparing to float a bond issue of $1,000,000, the entire sum to be used in building vitrified brick roads throughout the county; and Orange county is discussing a similar project, with favorable prospects for its adoption.

Hillsborough county cannot afford to lag behind in these matters. Conceded to be the wealthiest and most populous county in the state, she must set the pace in all policies of enterprise in order to hold her position.

No further demonstration of the value and advantage of paved roads is needed than a tour of the roads which have been built in the vicinity of Tampa. The construction of a good road has invariably been followed by the improvement of the property.

HERR WORKS ON CLAY EXHIBIT.

Albert Herr, manager of the Holly Springs (Miss.) Stoneware and Fire Brick Company, has just returned from a five days' visit to the Agricultural and Mechanical College at Starkville, where he went by invitation of Prof. W. N. Logan, the geologist, to prepare models of various designs from different kinds of clay from fifteen counties in Mississippi for exhibit at the State Fair soon to open at Jackson. Mr. Herr is an expert at modeling clays. He stated that Mississippi abounds in great wealth in these clays. That there is a vein of it forty miles wide ranging from one to fifty feet deep in this state, running from the foot of the Cumberland mountains in Tennessee diagonally across the northern and the northwestern parts of Mississippi, terminating in and around Vicksburg and Natchez. That it runs in dips like ocean waves; that it is what is termed kaolin clay and is used to make queensware, chinaware, stoneware, fire brick, drain and sewer piping and the like.

When asked which of the fifteen counties showed the best variety of clay Mr. Herr unhesitatingly answered Marshall county. Not because he happens to be from Marshall, but that by a careful comparison of the clays (all of which were good) it was clear that Marshall county's was the superior of any of the others. When asked what amount of that kind of clay, in his judgment, was embedded in Marshall county his reply was that there are now and have been for a long time two large potteries in Marshall county, located at Holly Springs, the one of which he is manager and the P. S. Allison Pottery Company, and that after a careful study of the matter it is his deliberate judgment that Marshall county alone has in it sufficient kaolin clay to supply the demand of the United States for the next ninety-nine years.

Mr. Herr is a member of the board of aldermen of Holly Springs.

OHIO VALLEY CLAY PLANT ENLARGED AND MODERNIZED.

New buildings and equipment to the tune of a $50,000 outlay are being completed at the Ohio Valley Clay Co.'s works, at Steubenville, Ohio. All this means an increased output and a modernizing of facilities in getting out their products.

A brick power building has been completed on the North High street side, 125 by 54 feet. To get ground to erect it the old James Robinson property was razed. In this building are installed engines and boilers as follows:

Two 100-horse power boilers; two 150-horse power gas engines and one 35-horse power gas engine; one 700-foot air compressor; two 115 K. W. generators; one 125-horse power motor; 3 panel switchboards.

In the future all machinery will be driven by electricity and motor connections will be attached to every piece of machinery.

The space heretofore occupied by boilers and engines in the grinding department will be fitted up for clay storage purposes in soaking and aging it. This will give a capacity for 500 tons more of prepared clay, also capacity for 500 tons additional storage capacity for German clays.

This will enable them to get all clays out of the cellar and out of the reach of high water. It also gives them space additional for 100 car loads of pot shell.

The two-story brick building erected across Washington street connecting the buildings on either side of the street is completed. It is 61x90 feet. It is built on steel structural iron and has a clearance of 15 feet over the street. Besides being used for connecting passageway between the two buildings, it gives them much space for the drying of blocks.

FIRST TAPESTRY BRICK FOR CLEVELAND.

A new thing in Cleveland, Ohio, in the building line, is the material specified by Architect J. Milton Dyer for the home of E. S. Burke, Jr., in Magnolia drive, by the way of tapestry brick, of which the McLean house in Washington is built. There are seventeen different shades of color in the brick, the finished product bearing a close resemblance to tapestry work.

The brick are laid up in Flemish bond, the joints (1⅛ inch) being made of white silica pebbles and Portland cement. There is no stone in or about the building, the paving, coping, sills and terraces being entirely restricted to brick.

NEW BRICK PLANT ERECTED IN STATESVILLE.

J. C. Steele & Sons, manufacturers of brick-making machinery, Statesville, N. C., have begun the erection of a brick plant on what is known as the Collier property, alongside the railroad, just east of the Steele shops and foundry, and will manufacture high grade pressed brick.

Steele & Sons have bought a lot of fine clay from Mr. Harry Reid, lying along the Catawba river near the railroad bridge, 12 miles west of Statesville and they will haul the clay from the river to Statesville by rail and manufacture it into brick at the plant erected near their shops.

SAND OR LIME BRICK OR BLOCK NEWS.

The brick works at Williamstown, N. J., will manufacture cement blocks during the winter.

The Rochester (N. Y.) Composite Brick Co. has a most unique exhibit at the Rochester Exposition which is now going on.

J. J. Donavan, of the lead mine which bears his name at Macomb, N. Y., is utilizing the by-product of the mine to make cement brick.

The Sixth Annual Convention of the National Association of Manufacturers of Sand Lime Products will be held December 5 and 6, 1909. Place not yet given out.

Edward Johnson, who recently sold the Sioux Falls (S. Dak.) Pressed Brick Co. works to Nebraska capitalists, will organize a company and start a furniture factory.

Carl A. Sundstrom, ex-manager of the Sibley (Mich.) Brick Co., claims the company is in his debt to the sum of $12,000 for money advanced, and has started suit for same.

The Watertown (N. Y.) White Brick Co. is defendant in a suit brought by Andrew William for the loss of a thumb while at work for the company at their plant at Sanfords corners.

The Aransas Pass (Texas) Brick & Shingle Co., have their plant ready for business and are now making brick from sand taken from St. Joseph Island. It makes a very high grade sand brick.

Work is being pushed on rebuilding the plant of the Fremont (Neb.) Granite Brick Co.'s plant which was destroyed by fire some months ago. The plant will be larger and up-to-date in every way.

S. N. Widdup and others have bought the property of the National Fireproofing Co. at Terra Cotta, D. C., and will manufacture cement brick made from the sand banks which extend from Terra Cotta to Takoma, that are owned by these parties. The plant recently burned to the ground and the Fireproofing Company decided not to rebuild it.

INSTALLING OIL BURNERS IN KANSAS.

The Coffeyville Brick Company has installed oil burners the last few weeks which has necessitated the laying off of several men. The company is as anxious to resume work as the men, as they are behind on their orders. This also holds up the paving in Cherryvale as this company has the contract to furnish the paving blocks.

The Union Brick & Gas Company has installed oil burners in their kilns and report it a success. The oil forced with steam makes a much hotter fire and the brick can be burned from one to two days sooner.

HOLLOW TILE TEST AT NEW YORK.

Unless the board of aldermen authorize the $30,000 that Mayor McClellan wants to make tests of hollow tile and cinder concrete, it looks very much as if the plan will not be carried out—not under the present administration at any rate.

Mr. McClellan says that Chief Engineer Lewis of the board of estimate, who was appointed to carry out the tests, had got fairly well settled on a location for the proving grounds, but that he could go no further with no money in sight.

Haigh's New System of Continuous Kiln Arranged to Suit all Locations

These Kilns can be seen burning Roofing Tile, Drain Tile, Dry Pressed Facing, Fire, Paving and Common Building Brick

Points of Superiority: Cheapness in construction. Easy to understaud and operate. Perfectly free from any nuisance. Will save more than one-half of the fuel used on other Kilns. Specially adapted for Utilizing Waste Heat for Drying Purposes, and which is being done most successfully

Address, H. HAIGH, Catskill, N. Y.

MISCELLANEOUS ITEMS.

Salt Lake, Utah, brick manufacturers have sold one million brick to be used in new structures at Twin Falls, Idaho.

The Sioux City (Ia.) Brick & Tile Co. has removed its offices to the Iowa Building and is now conveniently located.

Denver is going to abolish clay plants within her limits and the Denver (Colo.) Sewerpipe Co. is prospecting at Golden for a location.

The Glen-Gery Brick Co. is making big shipments of brick from the Shoemakersville, Pa. plant, which is turning out 70,000 brick a day.

Albert Zoppi, of Findlay, O., has organized a $50,000 company to build and operate a clay pot manufactory at Toledo, Ohio. The buildings will be started very soon.

The Tucson (Arizona) Pressed Brick Co. are considering the building of a branch plant at Phoenix, the capital city of Arizona. P. Monier is the president of the company.

Announcement has been made of a contract being closed to build a brick plant at Canyon, Texas, to make 40,000 brick per day, and the larger part of the output is sold in advance.

Work is nearly completed on the McDade (Texas) Brick Works and soon brick will be ready for the market. Tests show a most excellent quality of clay for the manufacture of brick.

The Norwalk (O.) Brick & Stone Co. have just closed contracts for three quarter million of brick for Toledo and Elyria. This will keep the plant running full time with an increased force.

The National Fireproofing Co., Pittsburg, Pa., has sold their property at Terra Cotta, D. C. It consists of 33 acres of land and ten kilns, the building having burned to the ground several months ago.

The Cary Brick Co., of Mechanicsville, N. Y., has bought the Plaistow (N. H.) Brick Works of Edward O. Glidden, of Cambridge, Mass. It is the largest yard in that section and covers an area of 108 acres.

Houck Brothers, formerly from Ohio, and later from Jennings, La., have closed contracts with Queenstown, Ala., people to build and operate a $25,000 brick plant there, and to have it in operation by the new year. The Queenstown Co. office is at 2113 1st Ave., Birmingham, Ala.

The plant of the Meek Brick & Tile Co., an organization composed of Chillicothe (Mo.) business men, will be located at Utica and work on construction has been started. The directors of the company are C. F. Adams, M. R. Jenkins, Joe Wallbrun, B. J. Meek and J. E. Meek. Main office at Chillicothe.

The Messerknecht Brick Works at Waseca, Minn., has been sold by W. A. Swift to Charles Ruehl.

The Rockford (Wash.) Brick Works have installed new engine and boilers and additional brick-making machinery.

W. A. Wiley has resigned as manager of the brick works at Seneca, Kansas, and Arthur Stevens has purchased his stock and succeeded him.

The Chanute (Kansas) Brick & Tile Co. bought a gas well on the McMillan farm west of the city. The gas will be piped to the company's plant and used.

The Interstate Fire Clay Co., Cleveland, O., has been organized with $10,000 capital stock, by C. H. Judkins, M. C. Mulhall, A. C. Miller, A. Z. Welch and W. H. Boyd.

The directors of the Alliance (Ohio) Brick Co. held a meeting and appointed a building committee with instructions to employ a competent engineer to lay out the plant and push work as rapidly as possible.

John Maxwell, formerly of Grand Junction, Ia., has taken charge of the Panora (Ia.) Brick & Tile Works, which has recently been purchased by G. H. Wiltse and A. B. Lofstedt under the firm name of Wiltse & Lofstedt.

The Norfolk (Va.) Brick & Tile Co. has been incorporated at Charleston, W. Va., with $50,000 capital stock. Incorporators are Delmar Lincoln, John D. Lewis, W. E. Moore, J. F. Hudson and C. M. Anderson of Charleston.

C. E. King's Brick Works at Portsmouth, Ohio, is soon to be a realization, the site is being graded and necessary buildings will be built within 45 days, the machinery has been ordered and will be placed in position within a few days.

Garland, Kansas, is to have a $100,000 brick plant. Dr. Cline, of Joplin, Mo., and other Missouri capitalists, have purchased 60 acres of shale and coal land of E. H. Denton, just north of Garland, on which the plant is to be located.

NOTICE

The Trade Mark

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is registered in the U. S. Patent Office and is our exclusive property It brands our best burned clay products. All manufacturers and dealers, except those selling our goods, are warned against infringement.

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GLASS SAND
ROCK, CLAY
COAL, ETC.

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue W. C.

AMERICAN PROCESS CO.,
68 William St. NEW YORK CITY

The brick yard at the east end of Piedmont, W. Va., has been leased to the Savage Brick Co., of Mt. Savage, Md.

The Indiana Brick Co., Anderson, Ind., are shipping out 50 carloads of brick a week. The freight shipments are double that of a year ago.

The Twin City Brick Co., Lumber Exchange, Minneapolis, Minn., has finished a plant to make drain tile from shale which the company owns a large tract of.

T. K. Hamilton, ex-superintendent of the Prison brick plant at Lansing, Kansas, is now the superintendent of a plant at Independence, Mo., where he has moved.

The Model Brick Co., Carrollton, Texas, has been incorporated with $35,000 capital stock. Incorporators are J. C. Thompson, A. J. Boedefield, and J. C. Siddons.

The Volenteer Brick & Tile Co., What Cheer. Ia., will build additional kilns and increase the capacity of their tile machinery so that they can take care of the trade.

The Shenandoah (Ia.) Brick & Tile Co. are making brick for Uncle Sam, they having the contract to furnish 400,000 brick each to the Shenandoah and Clarinda post-office.

The Port Credit (Ontario) Brick Works has been running night and day for the last three months so as to keep up with the orders, working 12 hours on the night shift. Seventy men are employed.

The Shackelford Brick Co., Des Moines, Ia., started their new continuous gas burning kiln on the 19th inst. Great interest is being taken in the outcome of this kiln by Iowa clay manufacturers.

J. C. Steele & Sons, Statesville, N. C., will build a brick works adjoining their brick machinery plant and will manufacture high grade press brick from clay taken along Catawba river, 12 miles away.

The stockholders of the Fertile (Ia.) Clay & Peat Co., at a recent meeting decided to continue the work mapped out and put large quantities of clay into the dry shed so as to operate as long as possible.

The Columbus (O.) Society of Architects recently were the guests of the Columbus Brick & Terra Cotta Co., at their plant at Union Furnace. They spent the day learning how good brick are made.

Two carloads of brick machinery from the C. W. Raymond Co., of Dayton, O., are being installed at the plant of the Lexington (Tex.) Brick & Tile Co. The capacity of the plant will be 20,000 brick daily.

The Daffney Brick Co., Mechanicsville, N. Y., has been incorporated with $35,000 capital stock. The directors are Wm. H. Daffney, Wm. H. Daffney, Jr., Stephen Lee, John L. Short and Joseph M. Purcell.

New buildings and equipment to the value of $50,000 are being made at the Ohio Valley Clay Co. works at Steubenville, Ohio. All machinery will be driven by electricity with a motor connected to each machine.

The Amarillo (Texas) Brick & Tile Co. is making additions in the way of machinery and buildings to the amount of $20,000. Kilns are being constructed and the machinery set. The total investment amounting to $55,000.

The Sheffield (Ill.) Shale Tile Co. has been incorporated with $45,000 capital stock, by Albert W. Charles, W. and George W. Boyden and taken over the Sheffield Brick & Tile Works built by D. O. Loy. They will double the capacity of the plant.

The Tendick Brick Co. will build during the winter adjoining the William Tendick yard at Jacksonville, Ill., a soft mud sand brick plant. F. H. Thies, Frank and George Tendick, all experienced brick manufacturers, are the owners of the enterprise that will be ready for the spring trade.

The Wise County Brick Co., of Bridgeport, Texas, has filed proof of final payment of its capital stock.

The Jonesboro (Ark.) Brick Co. has dissolved and desires to surrender its charter. Stuck Bros. own the property.

The Henry Clay White Vitrified Brick Co., Wilmington, Del., has been incorporated with $250,000 capital stock.

The South Webster (O.) Clay Products Co., will begin the erection of its plant Nov. 1st. Work on the construction will be continued through the winter months.

The Blue Ridge Enameled Brick Co. will enlarge its Saylorsburg, Pa., brick plant and will make building brick and tiling. New capital has been taken into the company.

The Bagley-McDonnell Brick Co., Middletown, Ct., has been incorporated with $10,000 capital stock, by E. S. Bagley, J. J. McDonnell and Agnes McDonnell, of Meriden.

The Wiley Clay Brick & Tile Co., of Wiley, Prowers Co., Colo., has been incorporated with $25,000 capital stock by H. O. Hainline, P. N. Schroeder and J. R. Pearson.

The Toledo, Ohio, workhouse made 1,500,000 brick this season that are selling at $6.50 per thousand. They are now closed down until next season, with a fair stock on hand.

The Gas Belt Brick Co., of Topeka, Kansas, has made a contract with a fuel concern at Pawhuska, Okla., to furnish their new plant there with fuel to make 100,000 brick daily.

The Washington Brick, Lime Mfg. Co. have begun the erection of brick buildings to house their machinery at their Freeman, Wash., plant. The old wooden structure will be taken down.

The New Jersey Clay Products Co. is getting its Piscataway, N. J., plant in shape and within 6 months the plant will represent an outlay of $125,000. Charles A. Bloomfield is the treasurer.

Calvin Britton owner of a brick plant at Mullikin, Mich., is examining the clay deposits about South Haven with a view of removing his plant to that locality. No bonus is asked either in cash or in a site.

Illinois Brick Co. stock was sold on the Chicago Stock Exchange Oct. 28th, at 64½. This is the highest figure that the stock has reached since the company was first organized. A year ago it was quoted at 30.

The Morrison-Trammell Brick Co., Rome, Ga., is resisting the involuntary petition in bankruptcy filed several days ago, and have filed a $10,000 bond to protect the creditors. The company claims it is solvent.

Thos. R. and Will R. Ellerbeck, of Salt Lake City, Utah, have found a deposit of clay 35 miles west of Salt Lake City that will make vitrified paving brick, etc. They expect to work the property, or lease it to the Utah Fire Clay Co., which they are the principal owners of.

The Excelsior Brick Co. and the Wisconsin Red Pressed Brick Co., both of Menomonie, Wis., have closed for the season after having made 6,000,000 and 5,085,000 brick respectively. Sixty-five men were employed at each yard.

The plant of the Central Georgia Brick Co., at Macon, Ga., which was destroyed by fire will be rebuilt at once.

The American Clay Co., Terre Haute, Ind., has resumed work after being shut down to put in new dry pans and additional machinery.

M. Tippery has resigned as manager of the Gettysburg, Pa., plant of the Auburn Shale Brick Co., and has returned to Philadelphia where he will act as salesman for the company. W. F. Oswald, secty. and treas. of the company, is in charge of the Gettysburg plant.

FOR SALE

One Penfield power Repress in first-class condition, capacity 10,000 per day, used only one month, write for particulars.

American Enameled Brick & Tile Co.
1 Madison Ave., New York City.

FOR SALE

One Four Mold Simpson Dry Press
One Fernholtz Pulverizer.
One 40 h. p. Engine and Boiler. Also shafting, pulleys, etc. Have extra mold box for dry press. Will sell all or any part of this machinery.

ED SHANNON,
Shellsburg, Iowa

Second-Hand Brick Machinery For Sale

1 two-mold brick press.
1 three-mold brick press.
1 six-mold brick press.
1 42-inch clay pulverizer.
1 Freese stiff-mud auger machine, pug mill and cutter.
1 Centennial auger machine and cutter.
1 clay mixer.
2 small engines.
Let us know your wants.

Scott Manufacturing Company,
1811 Third National Bank Bldg St. Louis, Mo.

Brick Plant for Sale or Lease

A cenveniently located brick plant on the main channel of the James River, 90 miles from Richmond, 18 miles to Newport News, and 40 miles to Norfolk, all having a good steady market for brick. Easy transportation for large boats. Want to see plant in operation. Therefore would make very easy terms.

Address MRS. AGNES L. TURNER,
Ferguson's Wharf, James River, Va.

FOR SALE

One No. 9A Brewer Tile Machine with hand Brick and Tile Cutters, Brick Dies and Tile Dies 3½ to 8 in. One 40 horse power Engine.

C. L. FINK,
Bricelyn, Minn.

WANTED

One good copy of the Clay Record, Number 10 Volume 16, to complete files for a ceramic school library. Address ROSS C. PURDY.
Ohio State University,
Columbus, Ohio

FOR SALE

Plans and Rights of Round Down-draft Continuons or Semi-Continuous Kilns. Both types possess new and improved features Address

William Radford,
Phoebus, Va.

HAMPTON'S KILNS

Burn 99 Percent Hard Brick and Tile

Old kilns easly changed.
Plans and yard rights cheap.

We Build Kilns and Guarantee Them

PITTSBURG KILN CONSTRUCTION CO.
618 14th St., N. E. Washington, D. C.

DRY PRESS FOR SALE

We have for sale one American four mold dry press, as good as new. A bargain if sold at once.

Des Moines Clay Mfg. Co.
Des Moines, Ia.

BRICK PLANT FOR SALE

Well known and good market in the city of Minneapolis. Plant is running at present. Will sell equipment and yard including horses. If deal is made quick owner can make brick this fall for spring trade. Address

Minnesota, care Clay Record,
Chicago, Ill.

POSITION WANTED

Sand-lime brick manufacturer, 15 years experience, highest references, wants position as Manager or Superintendent of a sand-lime brick plant. Capable to build a plant, to run it and to make it pay. If you cannot make money now call upon me.

Address "SAND-LIME,"
Care of Clay Record, Chicago Ill.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE

Sand-Lime Brick Plant in excellent condition, making granite pressed facing brick and standard grade of sterling quality. On four railroads, close to large markets, good trade, unable to fill orders now. A snap if taken at once. Write us.

Address "506" Care of Clay Record,
Chicago, Ill.

FOR SALE

The Entire Plant of The Powhatan Clay Mfg. Co.

Operating continuosly since 1893 at Clayville, Virginia, manufacturing the universally known Powhatan Front Bricks. The entire plant empracing 800 acres of land, employees' buildings, store, good will, etc , is offered at advantageous terms. Address,

14 North 7th St., Richmond, Va.

WANTED

A practical brick and tile man to take the management of a brick and tile plant and invest some money. No tile plant within 100 miles. Cannot supply the demand. Everything up-to-date in machinery, dryers, kilns, etc. Located in Michigan.

Adddress "MICHIGAN" Care of Clay Record,
Chicago, Ill.

FOR SALE CHEAP

Four Mold Ross-Keller Brick Press in good working condition. CHISHOLM, BOYD & WHITE CO.,
57th & Wallace Sts., Chicago, Ill.

FOR SALE

Two second hand American Clay Machinery Co. No. 2 Automatic Cutters.
One Western Wheel Scraper Co No. 2 Jaw Crusher.

Hydraulic Press Brick Co.,
Brazil Branch,
Brazil, Ind.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio

Address A. B. care Clay Record.
Chicago, Ill.

FOR SALE

A brick and tile plant in Green County, Iowa. Cannot supply the demand. All new machinery. Good reason for selling. Write for particulars to

GREEN, Care of Clay Record
Chicago, Ill.

WANTED

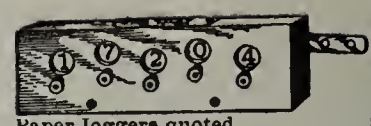
A young or middle aged man, of habits, strictly good, honest and reliable, one who is experienced in the manufacture of clay products and also able to handle correspondence pertaining thereto, and the use of machinery for the manufacture thereof, for position in sales department of reliable machinery manufacturer. In reply to this advertisement state salary that would be expected and give several references as to ability and character. Address.

Sales Dept. Care of Clay Record,
Chicago, Ill.

LOCATION OR PLANT WANTED

I am looking for a location or preferably a plant partially or ready to run for making clay products; such as drain tile builders and pavers, in fact a good shale and fire clay propositiou, preferably in Indiana or Illinois, on good road or roads Will buy a managing and sales managing interest or all if conditions are right. Address

"LOCATION" Care of Clay Record,
Chicago, Ill.



No better made, cut from $8 and $10, to
4 Wheel, $3.00
5 Wheel, $3.25
Guaranteed.
Sold by all dealers

Paper Joggers quoted.
R. A. HART, 41 White St., BATTLE CREEK, MICH

GOOD OPENING FOR CAPITAL AND EXPERIENCE

For the purpose of making enlargements would like to interest capital in clay plant, have dry press and stiff mud outfits, making fire brick, face brick, hollow building tile, fire proofing and common brick. Located in the west and have a great advantage in freight rates over a good market on fire brick, fancy face brick, tile etc. Have immense deposits of high-grade fire clay, several varieties of shale and unlimited quantities of good surface clay. Would prefer to interest parties practical in clay working and will offer good inducements.

A. N. M , Care of Clay Record,
Chicago, Ill.

WANTED

To sell all or a two-thirds interest in an up-to-date Brick Plant and Coal Mines, excellent shale for street block, 12 feet of fire clay, two coal mines, both operated with compressed air machine, with more orders than can be taken care of. An excellent proposition and a money maker, good reason for selling, Manager wants to go South. If interested write to, "BERT" Care of Clay Record

Chicago, Ill.

DRYER CARS

We have on hand a lot of second hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, Ohio

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick.

Address,

FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE

One Form Mold Berg Dry Press, good as new. Made about 200,000 brick. Guarenteed in good working order. Address

BUCKEYE FIRE BRICK & CLAY CO.,
Scioto Furnace, Ohio

FOR SALE

Brick Yard within easy hauling distance of Chicago. 13 acres, well equipped plant. Would lease or make good proposition to man to make investment and run the plant. Address

FRANCIS LASLOW,
79 Walnut St., Oshkosh, Wis.

FOR SALE

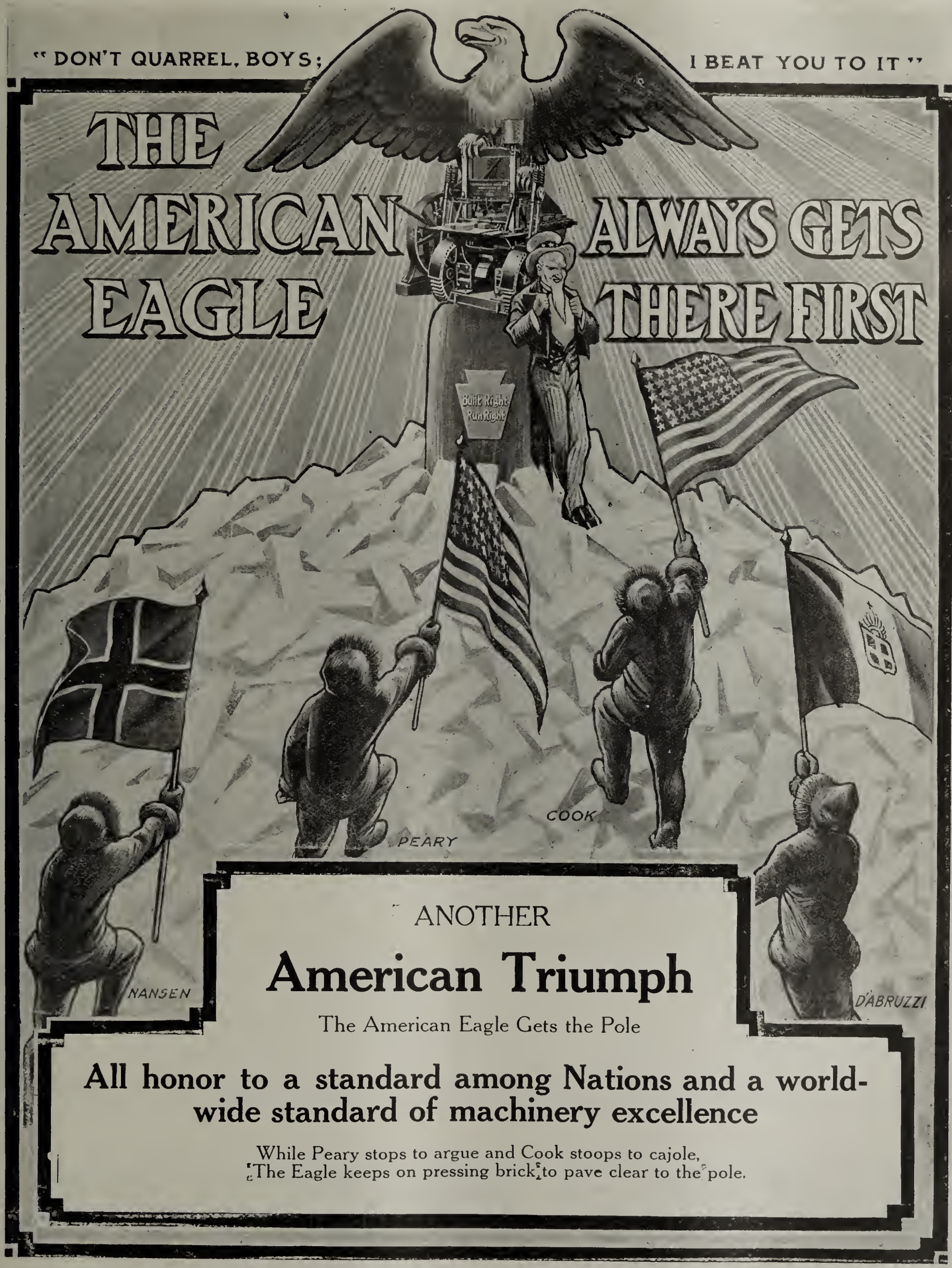
New Sand Lime Brick Hardening Cylinder, 6 feet diameter by 68 feet long. One removable head. Immediate shipment.

FRANKLIN BOILER WORKS CO.,
Troy, N. Y

PLANT FOR SALE

Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capacity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7,00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles. Cheap fuel and labor; can operate with steam dryer year around. Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments

W. L. JONES,
Lock Box 5, Williamsburg, Va.



ANOTHER

American Triumph

The American Eagle Gets the Pole

All honor to a standard among Nations and a world-wide standard of machinery excellence

While Peary stops to argue and Cook stoops to cajole,
The Eagle keeps on pressing brick to pave clear to the pole.

The American Eagle has Won the race to the North Pole!

THE AMERICAN EAGLE WINS THE POLE IN EVERY RACE BE-cause its superiority places it easily in the lead, and brings it in a winner in every contest. There is no Eagle like the American Eagle; there is no repress like the American Eagle Repress. It leads the world in ambition and achievement. It has a larger record of victories than all others because it has been groomed and trained to win and has the staying quality back of it.

There are more Eagle Represses in operation today than there are all other Represses. Were all the Eagle Represses, now in operation, set to work making pavers, they would in a single season make enough brick to pave a roadway from the United States to the North Pole, and it would be a good roadway too, because no repressed brick is superior to the brick made on the Eagle

The Eagle Always Wins!

If you are interested in the best repressed brick possible and the best possible press to make them on, you should know all about the Eagle. We will send you a full description for the asking Our big catalogue tells all about our long line of machinery for making every class of clay products by every known process. We make all this machinery in our own plants and can guarantee every quality to be equal to that of the Eagle Repress. If you are interested in a quality that will make repair bills the exception instead of the rule, you can save money by installing the "Built Right, Run Right" line of Clay Working Machinery.

We build every machine and every appliance for making every class of clay products by every process We can meet the exact needs of every clay worker without prejudice. If you have a clay problem we can solve it for you. Correspondence solicited.

The American Clay Machinery Company

Bucyrus, Ohio, U. S. A.

Centrifugal Clay Screen

IN OUR NEW CENTRIFUGAL CLAY SCREEN WE HAVE A RADICAL DEPARTure in Clay Screens. The motion is centrifugal instead of vibratory. The life of the machine is thus lengthened and the capacity increased. As the cut shows the screen is made up of two hoppers substantially mounted on a steel frame. The screen plate is circular with large screening surface. It is supported by spiders in a horizontal position. The spiders are keyed to the vertical shaft which is connected to the driving shaft by a pair of bevel gears.

Just beneath the screen plate is a steam coil heater arranged to heat the screen plate to prevent damp clay from clogging perforations in the plate.

Surrounding the vertical shaft is a cast iron hopper or spout through which the clay is fed on the screen plate. This hopper can be raised or lowered to regulate the flow of clay on the screen. The hopper being always full of clay keeps an even flow to the screen. The screen as it revoles throws the clay from the center to the outside of the screen plate, the flow being even and regular. The larger particles of clay, too large to pass through the perforations, pass over the screen plate to the outside and fall through the outer housing to a spout conveying them to the grinding pan for regrinding. The fine particles of clay sift through the screen plate into the inner housings or hopper and pass to a conveyor and into a clay bin.

The whole operation is rapid and thorough and the principle insures great capacity and freedom from troubles. Many of these screens have been installed and are giving universal satisfaction.

In actual operation the No. 147 Screen, which has a screen plate six feet in diameter, is screening equal to the capacity of two nine-foot dry pans. We also build this screen with a four-foot screen which will handle clay to the capacity of one pan. Full particulars as to construction and operation of this screen will be sent upon request

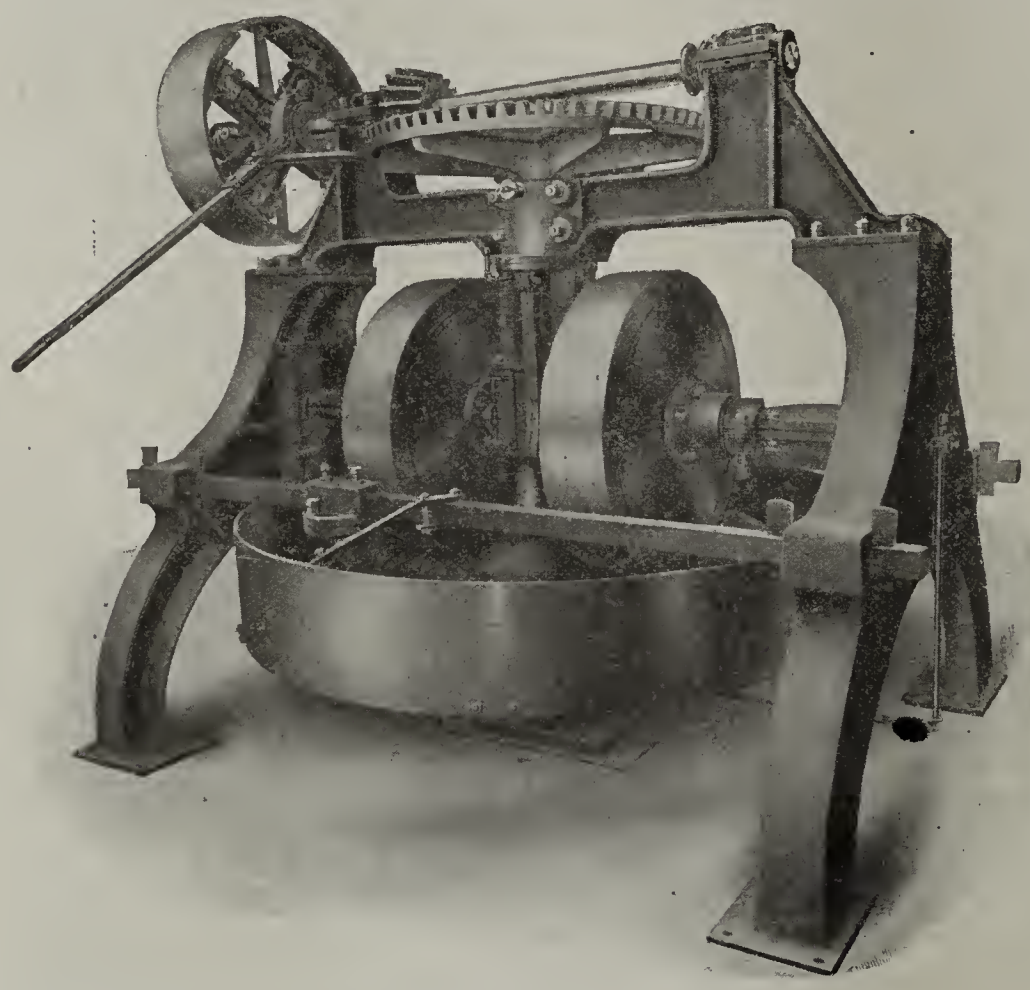
We build every machine and appliance required for the manufacture of every class of clay products by all processes. We are much the largest manufacturers of Clay Working Machinery in the world. Manufacturing as we do every machine and appliance right in our own factories we are better prepared to serve you at a saving in time and money than are others.

The American Clay Machinery Company

Bucyrus, Ohio, U. S. A.

Wet and Dry Pans

TO THE EXACTING BUYER OF DRY AND WET PANS OUR LINE APPEALS strongly because of the superiority of design and excellence of material and workmanship all of which are features which are of the greatest importance in the permanent satisfactory operation of pans. The capacity of a pan depends largely upon its design and construction, and the distinctive features embodied in our line of pans have given them a greater capacity than others and have insured more working hours per pan with fewer delays and repairs than can be had from other styles of pans. We have been generous in the design of each pan our lines being the heaviest on the market. This feature should be given special consideration as a lighter weight pan is necessarily much cheaper and should not be compared with our heavy, durable and efficient machines.



The heavy side frames are substantially tied together at the top by the cross beam, in the center by tie bars and also on the floor line. The shafting is large and of steel. The gears are of special design and excellent quality. The bearings are long and well babitted. The mullers are heavy, adjustable and removable. The screen plates are made of special iron. The step is of our approved type and the complete pan is one that can be depended upon under more than ordinary circumstances. All joints are carefully machined and fitted and bolts are made secure by lock-nuts. The vertical shaft and muller shafts are secured by large removable bearings, which make it possible to remove any of these shaftsor the mullers without disturbing the balance of the pan. The gearing is kept to its full efficiency by our device for taking up any possible wear, which insures a perfect mesh of teeth at all times.

For preparing successfully many kinds of fire clay, shale and slate used for paving brick, and for grinding burnt brick or pipe for grout, etc., dry or wet pans are a necessity. The wet pans are particularly adapted for handling material in moist condition, while for use in dry pans it should be practically dry, so that when ground, it will readily pass through the screen plate without clogging

Write for particulars on our "Divided Screen Plate" which will make a big saving of screen plates. There in no machine required for the manufacture of any clay product which we do not build. Each machine is superior in it's class and of our standard quality.

Built Right Run Right

The American Clay Machinery Company

Bucyrus, Ohio, U. S. A.

Built Right Run Right

THE BOSS SYSTEM OF BURNING BRICK

Involves the ORIGINAL PRINCIPLE of applying AIR UNDER PRESSURE.

Applies to Any Style of Kiln.

Absolute Control of Heat in Kiln.

WRITE FOR CATALOG

40% Reduction in Fuel Cost.

Burns All First-Class Hard Brick

JOHN C. BOSS OFFICE: MONGER BLDG. **Elkhart, Indiana**

Do Your Brick Turn White?

HERE IS THE REMEDY.

PRECIPITATED

Carbonate K.B. C.F.H. **of Barytes**

The only preventative for scum and discoloration on facing Brick and Terra Cotta; neutralizing the Sulphate of Lime in the Clay and Water.

Circulars and Particulars on Application.

GABRIEL & SCHALL

205 Pearl Street NEW YORK P. O. Box 1712

They Never Fade

Twenty long years of time and weather have tried out Ricketson's Famous Red Brick" Brand

..COLOR..

for Mortar, Brick, Cement, Stone, etc., Proves it Absolutely Permanent. Red, Brown, Buff, Purple, Black.

RICKETSON MINERAL PAINT WORKS
MILWAUKEE, WISCONSIN.

C. K. WILLIAMS & CO.

EASTON, PA.

BRICK AND MORTAR

COLORING

Send for full descriptive Circulars

New CLAY FEEDERS and MIXERS for Brick, Tile and all Clay Working Plants

Saves the labor of from 1 to 2 men in every factory, besides mixing and feeding the clay evenly to the disintegrator

One of the many testimonials we have received from users of these Feeders

SUMMITVILLE DRAIN TILE COMPANY
Manufacturers of Porous Drain Tile

Harry L. Erlewine, Secy. and Treas.,
Marion Machine, Foundry and Supply Co., Marion, Indiana

Dear Sir:

Acknowledging your favor of the 21st inst., will state that the type "C" Feeder which we have installed in our plant here is "making good" in every way and is all you claim for it.

Since installing the Feeder we have been able to get along with two men less, thereby reducing our weekly pay-roll $20.00 and at the same time have increased our output 10% decreased our power 10%, and as our capacity is 1200 cars per year, you can easily see the great advantage we have since installing the Feeder and Mixer.

All this saving is effected because of the even, steady feeding of the clay to our disintegrator. We have our tracks elevated about 9 feet above your Feeder and Mixer, and we are enabled to dump about 25 car loads of clay in our storage bin over the Feeder, and the Feeder takes care of all this clay without any further attention on our part.

We feel that this is one of the most valuable machines we have in our plant and no one who has ever tried one of your Clay Feeders would go back to the old way. Thanking you for the courtesies shown, we remain

Very truly yours,
SUMMITVILLE DRAIN TILE CO., Per JAMES F. MORRIS, Vice-Pres.

MARION MACHINE, FOUNDRY and SUPPLY CO., Marion, Ind.

A TURN OF THE CRANK SAVES 2 MEN'S PAY

THIS wonderful pump does the work of two men, at a small fraction of their wages, and without argument.

It will pay for itself in a very short time. Think of the saving in dollars and cents, the saving in time, the gain in efficiency.

No contractor or engineer who has any quantity of water to contend with can efford to be wiihout the marvelous

Fuller & Johnson

Bilge Pump Engine

It doesn't need to be urged to do its best — it can't do anything else.

It is built with the same care and attention to details, the same thoroughness and honesty, as all Fuller & Johnson Engines.

It's always ready, day or night at a touch.

Each day you're without it you're throwing good money away.

Send for our Bulletin and see for yourself. (21)

Fuller & Johnson Mfg. Co.

Established 1840

458 2nd Street, - Madison, Wis.

Fire Brick——Fire Clay

AND FIRE CLAY PRODUCTS

Manufactured out of highest grade Missouri semi-flint fire clay.
A large stock of Number One brick and shapes always on hand.
Let us quote you prices and we will save you money.
Samples sent upon request. Address

Mexico Brick & Fire Clay Co.

MEXICO, MISSOURI

Something New In Brick Kilns and Dryers

The Lennis Double Chamber Up and Down Draft Brick Kilns and Direct Heat and Hot Air Brick Dryers show many new features that make them superior to all others. Economical, durable and strong in construction and operation, having many points of dvantage that appeal to practical brickmakers. Patented April 14, 1903 and September 8, 1903 Brick plants installed and put in operation. Write for booklet. Correspondence solicited.

F. W. DENNIS,
145 Water St., Norfolk, Va.

Approved and Labeled

Fire! Fire!! Fire!!!

Extinguishers

Protect your Home, Business, Factory

Insurance Reduced. Child can Operate.
Made of Copper. Will Last a Lifetime.

Chemical charges can be procured at any drug store

Write today; don't wait; delays are dangerous.

O. J. Childs Company

Sole Manufacturers — Utica, N. Y.

AMERICAN RING-HAMMER PULVERIZER

Two Models, one for Clay, Shale, one for Rock

Will pulverize from 4 mesh to 200 mesh, 1 to 50 tons per hour, according to size of machine, fineness required, kind and condition of material.

30% to 60% less 3peed, and 25% to 50% less power, due to the RING and its utilization of CENTRIFUGAL FORCE.

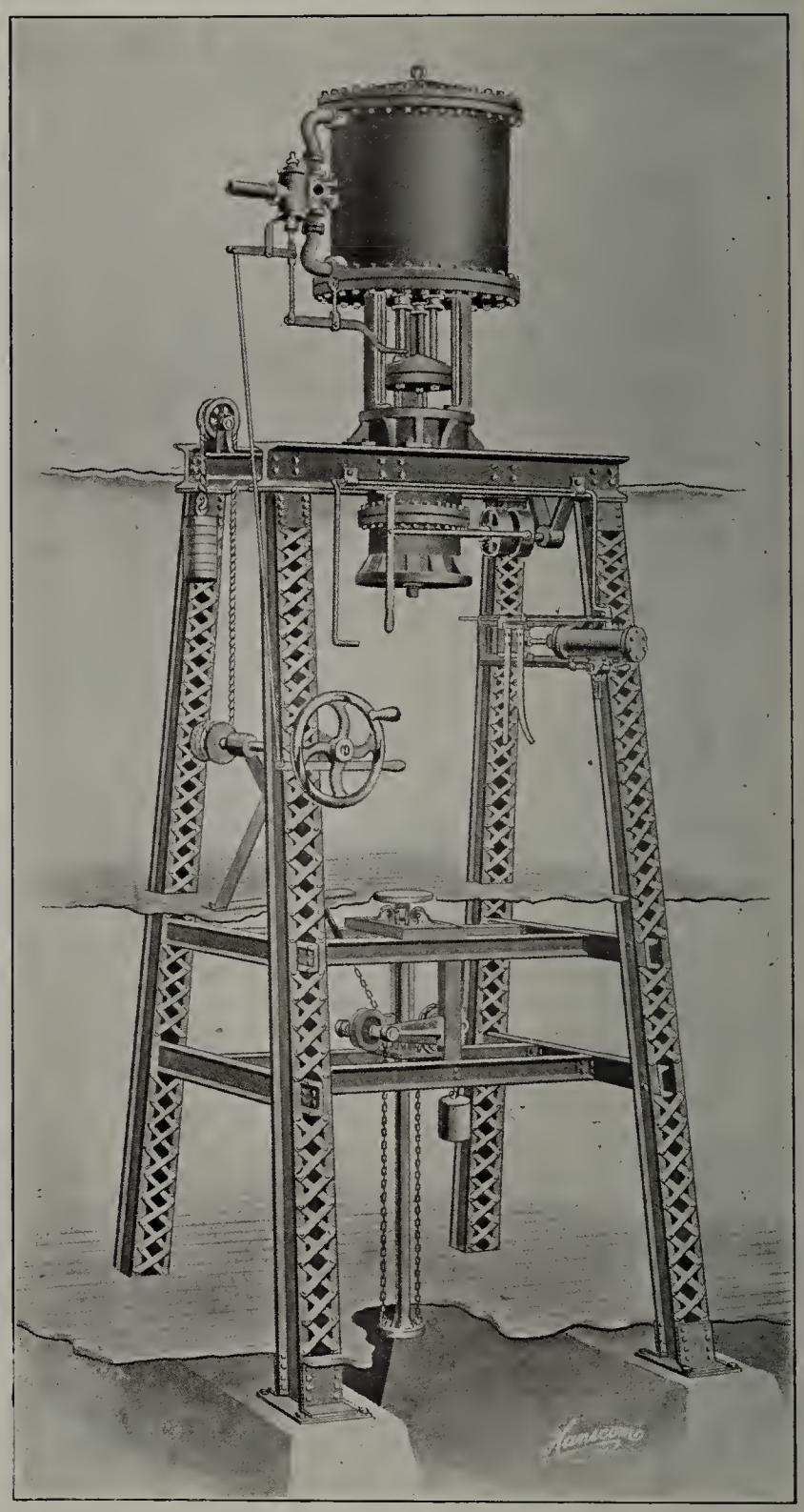
We make six sizes and every machine guaranteed to do the work which it is contracted to do when sold.

Revolving Screens Air Separators
Ask for Circulars and Information

AMERICAN PULVERIZER CO.

Suite 410 Jaccard Bldg., ST. LOUIS, MO.

DISTRICT SALES OFFICES:
F. C. Willis, 36 LaSalle St., Chicago, Ill.
I. R. Coles & Co., 39 Cortland St., New York City.
Lindrooth, Shubart & Co., Boston Bldg., Denver, Colo.



44 X 20 SEWER PIPE PRESS

SEWER-PIPE MACHINERY

COMPLETE EQUIPMENT

THE TURNER, VAUGHN & TAYLOR COMPANY

CUYAHOGA FALLS, O.

REBUILT ENGINES AND BOILERS

The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

ENGINES—Automatic—16x32 Buckeye, 15x14 Erie, 14¼x16 Buckeye, 14½x14 Ball & Wood, 13½x15 Taylor, 13x16 Erie, 12x14 Green, 12x12 N. Y. Safety, 10x10 Fisher, 9½x12 Leffel, 8x10 Allfree, etc.

ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

BOILERS—Stationary—72x18 High Pressure, 72x18 Standard, 72x16, 66x16, 60x20, 60x16, 54x16, 54x14, 54x12, 48x16, 48x14, 44x14, 40x12, 40x9, 36x16, 36x10, etc.

BOILERS—Fire Box—80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 h. p., etc.

BOILERS—Vertical—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 3 h. p., etc.

HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

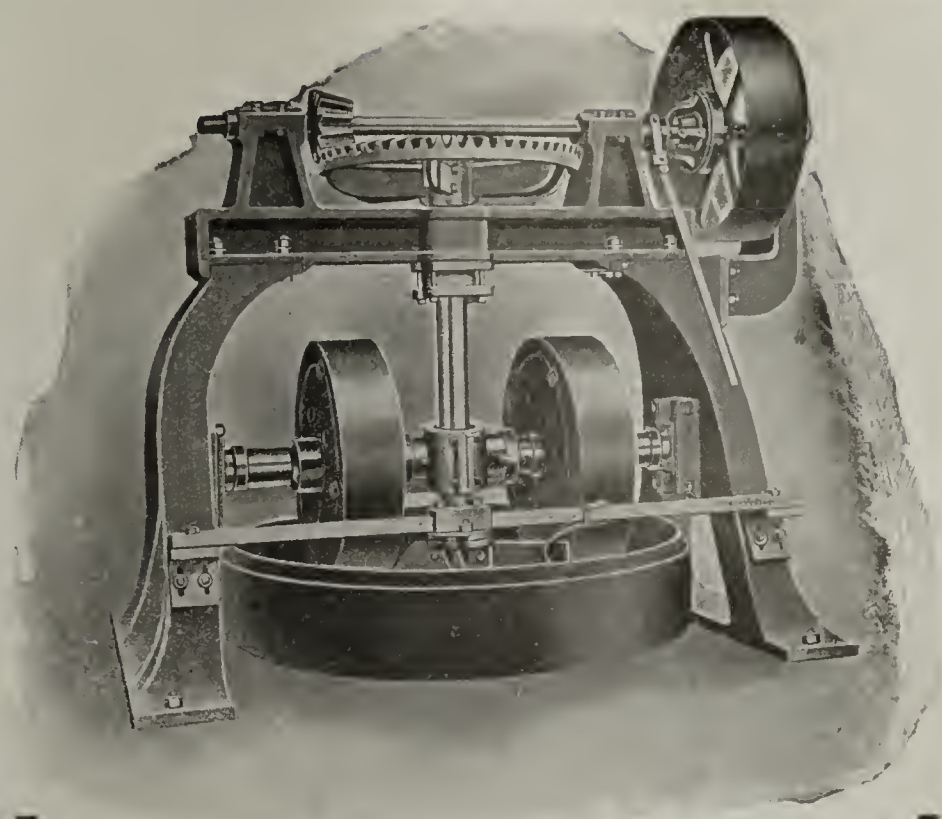
Saw Mills, Lath Mills, Edgers, Cut-Off Saws, Tanks, etc. Write for list.

Also fu l assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

The Randle Machinery Co.

1732 Powers Street **Cincinnati, Ohio**



PHILLIPS & McLAREN CO. PITTSBURG, PA.

BUILDERS OF

Pittsburgh Standard Dry and Wet, Revolving and Stationary Grinding Pans for Brick, Cement, Sand, Terra Cotta and all kinds of Refractory Materials.

ROCK AND ORE CRUSHERS

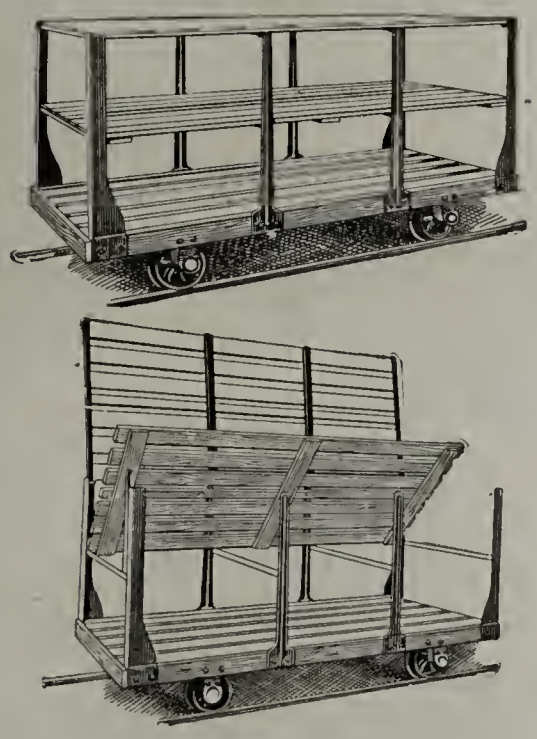
When writing for prices state kind of material and capacity required.

Eastern Offices

Stephen Girard Building, Philadelphia, Pa.

The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices



Vulcan Iron Works MASON CITY, IOWA

"A CHANGE IN FLUES MAKES THE DIFFERENCE IN DRYERS"

POTOMAC BRICK COMPANY

1413-G Street, N. W.

ELLIOTT S. MORSE, Gen. Mgr.

Washington, D. C., March 19, 1909.

THE KING ENGINEERING CO.,
Richmond Va.

Gentlemen:—Our No. 1 10-tunnel Sharer Radiated heat dryer before it was remodeled by you gave us an average of 55 cars per day of dry brick.

You completed the reconstruction of this dryer the latter part of January last. This day we have examined our records and find that our daily average now is 80 cars dry brick.

Yours very truly,

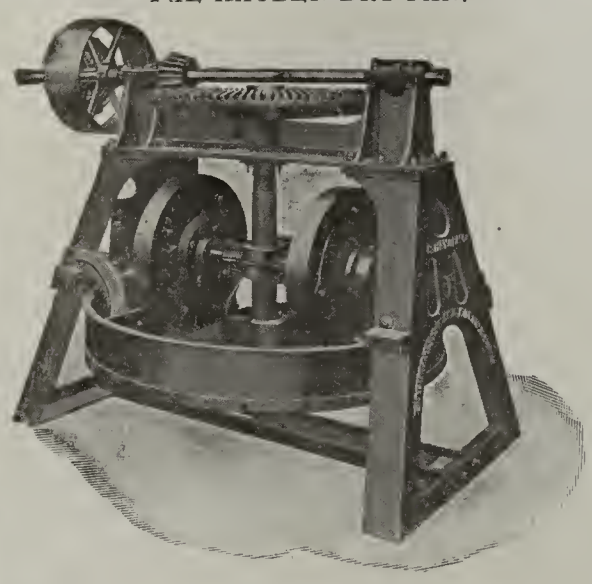
(Copy) ELLIOTT S. MORSE.

That which we have done for the above Company **we can do for You.** We can remodel **any** Radiated heat dryer **and increase its capacity** from 15 to 30 per cent.

THE KING ENGINEERING COMPANY

RICHMOND, VA.

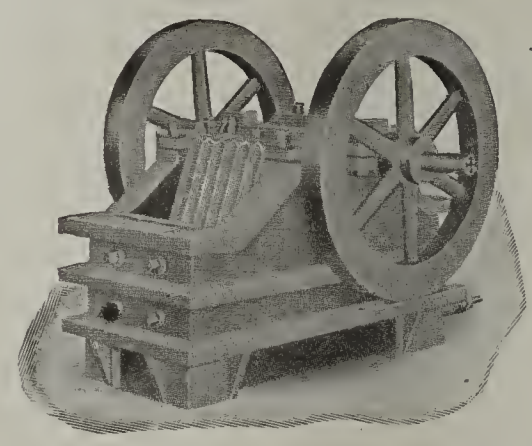
THE HAYDEN DRY PAN.



Masssive and well proportioned.
Best material.
Time tried and reliable.
Large capacity.
Acurate mechanism.
Independent or yoked mullers.

Send for specifications and prices before buying.

THE HAYDEN CLAY CRUSHER



This Crusher is specially designed and adapted for use as an auxiliary to the dry pan.
Capacity 10 to 30 tons per hour.
Simply constructed and the strongest machine of the kind on the market.

Send for circular and prices.

THE HAYDEN
BRICK TESTING RATTLER

For testing paving brick.
Built to the standard specifications of the N. B. M. A.
Best material and workmanship.

Send for descriptive matter.

The P. HAYDEN S. H. CO., Foundry and Machine Dept.

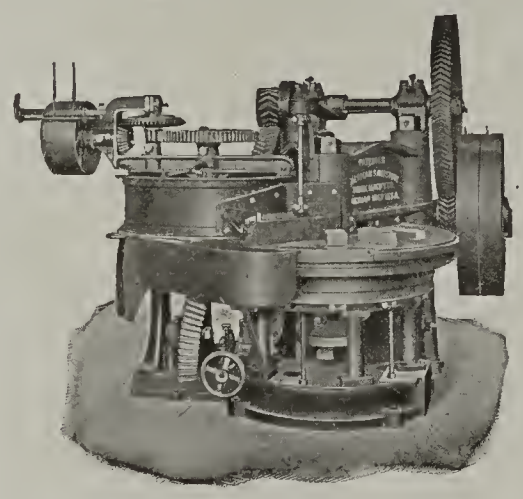
Manufacturers of

WET AND DRY PANS, CLAY CRUSHERS, STEAM CLAY PRESSES, RATTLERS, BRICK CARS, CARWHEELS, AXLES, KILN BANDS, etc.

112 West Broad Street **COLUMBUS, OHIO**

The American Sandstone Brick Machinery Co.

INCORPORATED APRIL, 1902
SAGINAW W. S., MICH.



Improved Saginaw Rotary Presses

Are now being built with extra table for making fancy brick, on which double pressure is exerted.

Don't confuse our Practical System with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant, starting and operating at our expense until at least 100,000 brick are made before asking for a settlement.

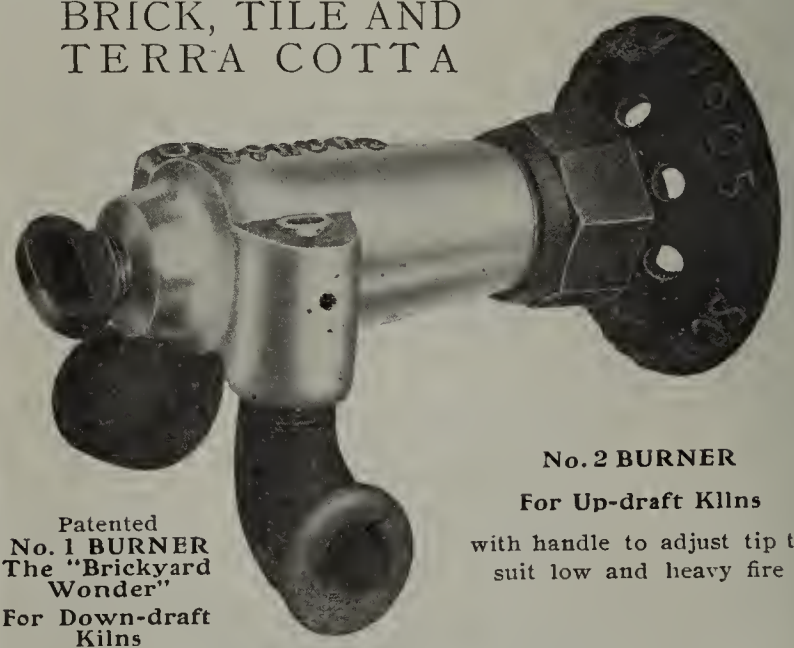
Our plants are **installed under the supervision of Practical Engineers who know how Sand-Lime Brick should be and can be made.** We have **Practical Plants Running Successfully** to show to prospective investors.

WE ARE NOT SCIENTISTS

We **Produce Results,** because we are the **Oldest Practical Sand-Lime Engineering Company Doing Business in the United States,** and **we defy contradiction.**

SCHURS Perfected Oil Burners

MOST ECONOMICAL BURNERS ON THE MARKET. DESIGNED ESPECIALLY FOR BURNING BRICK, TILE AND TERRA COTTA



ADJUSTABLE TIP

Patented
No. 1 BURNER
The "Brickyard Wonder"
For Down-draft Kilns

No. 2 BURNER
For Up-draft Kilns
with handle to adjust tip to suit low and heavy fire

Not an experiment, but a severely tested, well proved burner whose superiority to all others has been amply demonstrated.

Write for Booklet containing full information.

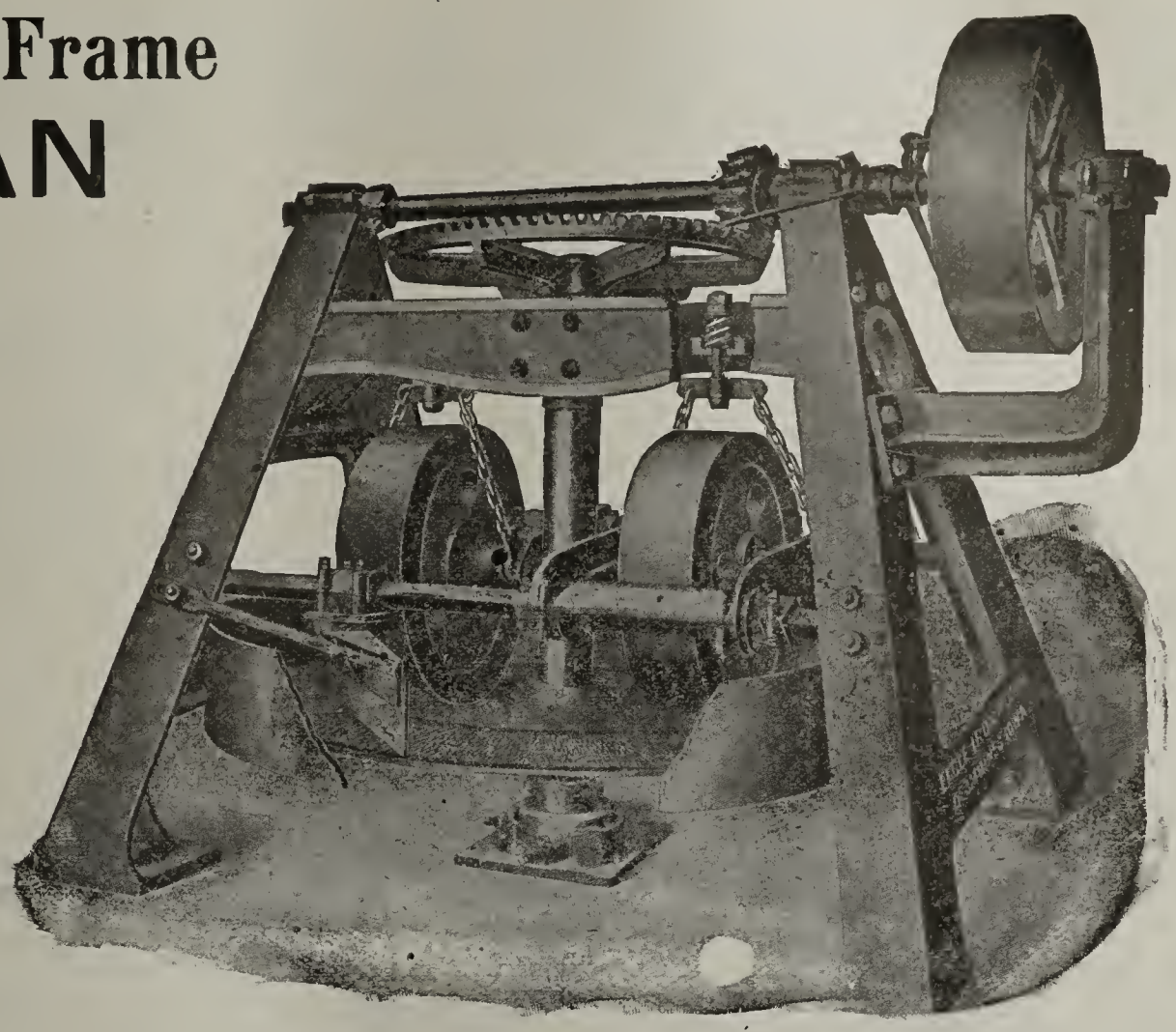
JOHN SCHURS, Patentee and Manufacturer
1007 NORTH MAIN STREET LOS ANGELES, CAL.

Nine Foot Iron Frame
DRY PAN

With Independent
and Suspended

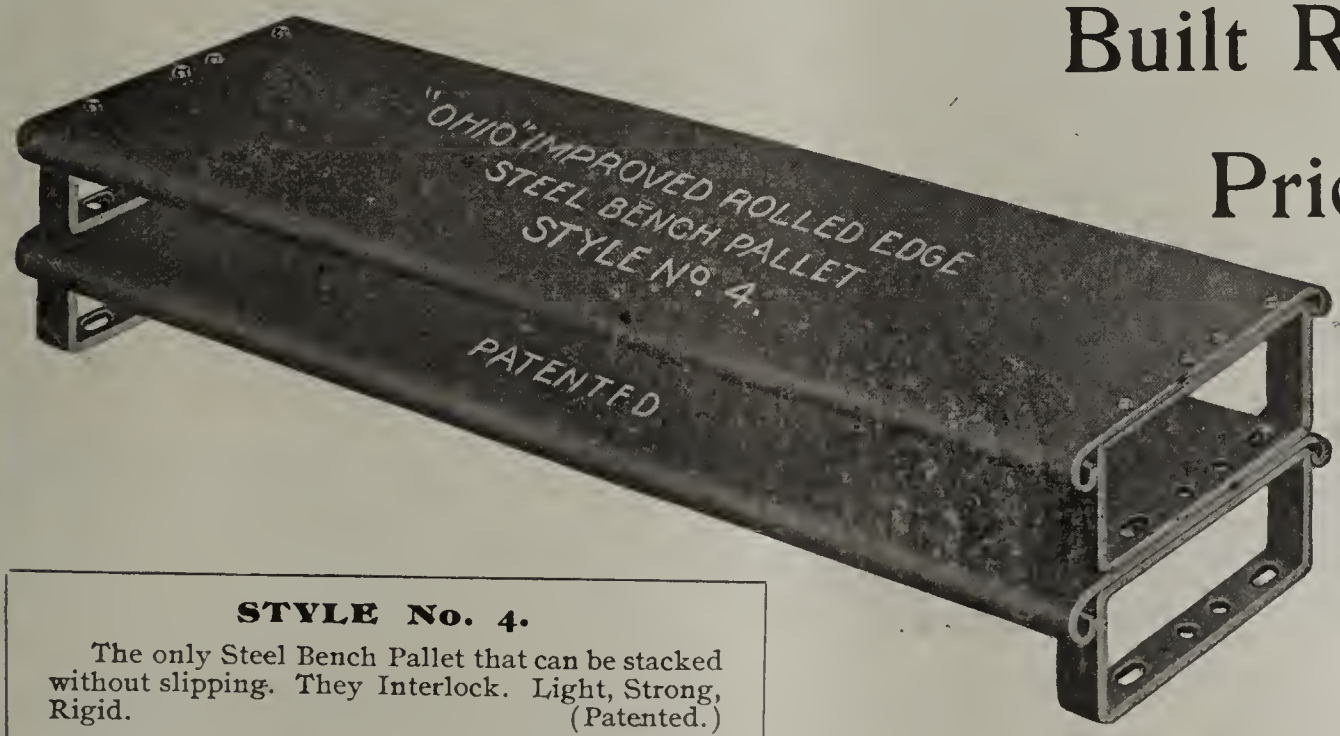
MULLERS

A well-tried and
proven Success.



EAGLE IRON WORKS, BUILDERS, DES MOINES, IOWA

Steel Brick Pallets



Built Right,

Price Right,

Write Us

STYLE No. 4.

The only Steel Bench Pallet that can be stacked without slipping. They Interlock. Light, Strong, Rigid. (Patented.)

ALL STYLES

MADE EXCLUSIVELY BY

THE OHIO GALVANIZING & MANUFACTURING CO.

NILES, OHIO

PAUL FUCHS

Manager of the Excelsior Granite Brick Co. -:- Specialist for the Sand-Lime Brick Industry

Inventor of a New Process for Making "GRANITE BRICK"

My system enables the manufacturer to turn out a sand-lime brick of a compression strength of 9,000 pounds per square inch from proper raw materials. Send in a one-pound fair average sample of your sand and a one-pound sample of your lime for examination.

Porcelain Enamel for Clay Brick

Forward, express charges prepaid, ten brick for testing purposes.

Special Enamel for Sand-Lime Brick

Send in as many brick as colors wanted and specify colors desired.

1747 CARMEN AVE. Chicago, U.S.A.

HANDLE YOUR CLAY WITH ONE MAN AND

The Thew Steam Shovels

Made in Four Sizes. Mounted on Car Wheels or Traction Wheels.

Type No. 0 Shovel—Ohio Brick Co., Toledo, O.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adjusted to cut to any desired level.

: : Only One Operator Required.
Wire Cables used instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickyards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

Write us for Catalogues and Information.

THE THEW AUTOMATIC SHOVEL CO.

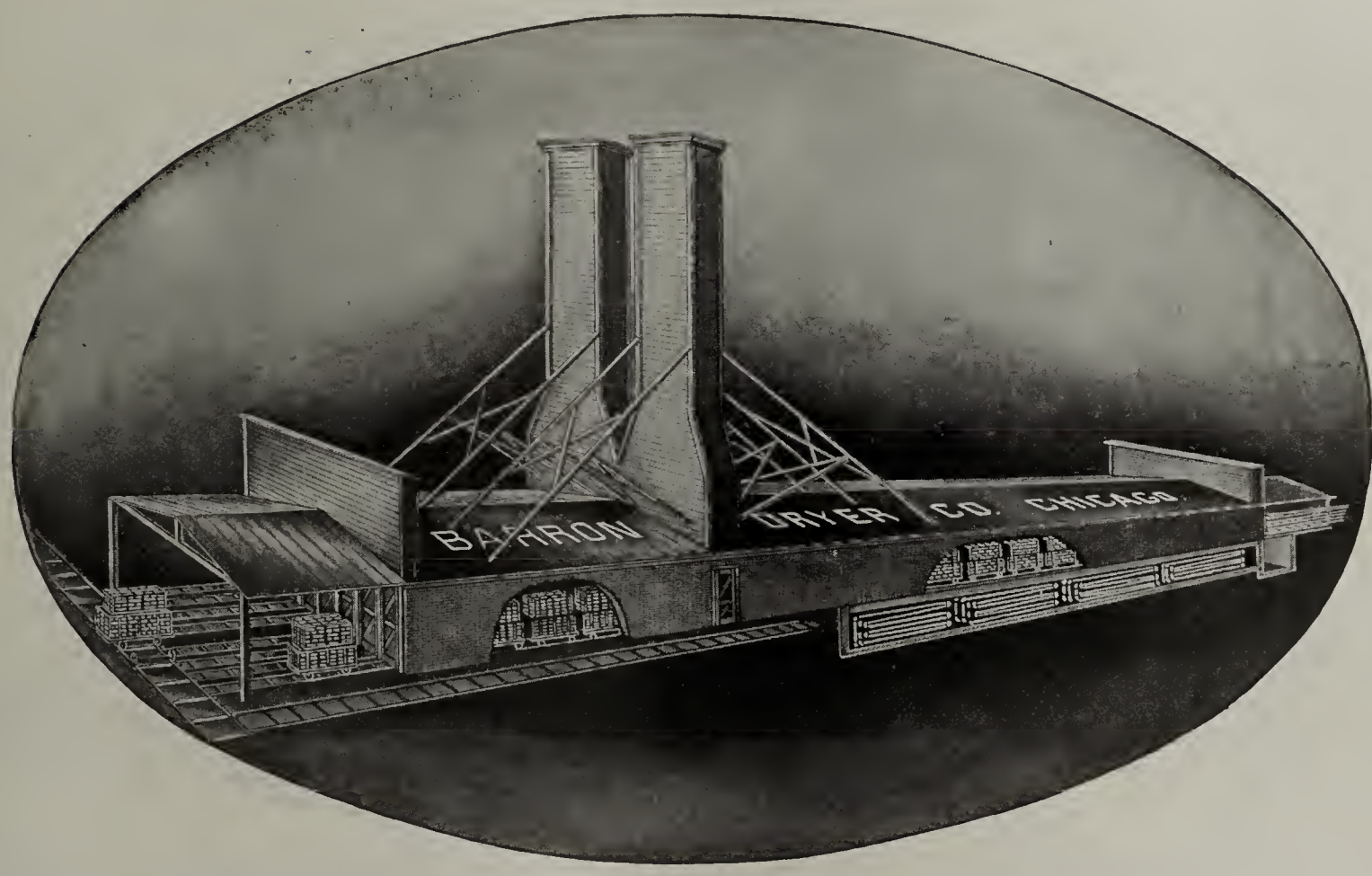
LORAIN, OHIO

BARRON DRYER COMPANY

Established 1879

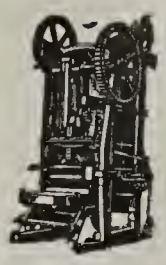
MANUFACTURERS, PATENTEES and BUILDERS of the

CHICAGO IRON CLAD DRYERS
BARRON'S TENDER CLAY DRYERS



CARS, WHEELS, AXLES, DECKS, TURNTABLES
CASTINGS, FORGINGS, PIPE, VALVES, FITTINGS
RAILS, SPLICES, SPIKE, STRUCTURAL MATERIAL

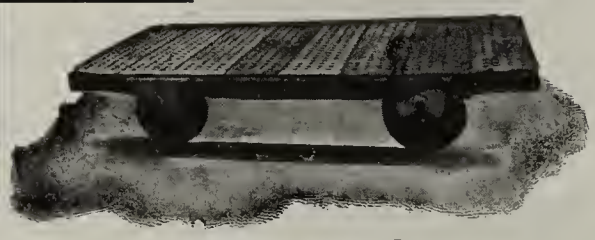
OFFICE AND SHOPS 1335 SLOAN STREET ON C. & N. W. RY. CHICAGO



THE "MARTIN" CLAY-WORKING MACHINERY

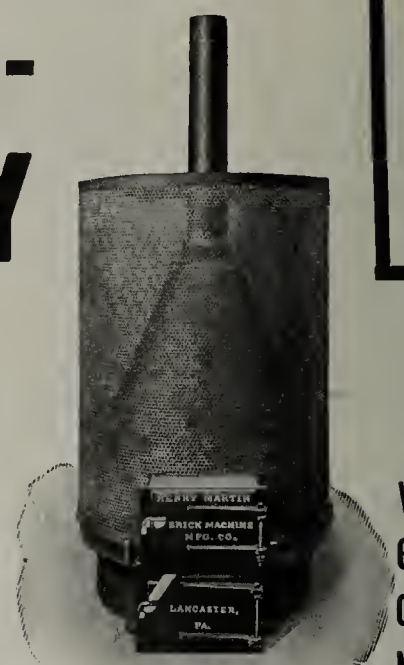
IS KNOWN THE WORLD OVER FOR

ITS SIMPLICITY DURABILITY AND COMPLETE SATISFACTION THROUGHOUT



DRYER CARS

TRUCKS

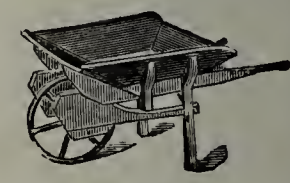


MODEL SAND DRYER

WE GUARANTEE OUR MACHINERY.

HORSE POWER MACHINE

YARD SUPPLIES



OF ALL KINDS BUILT RIGHT

TRUCKS

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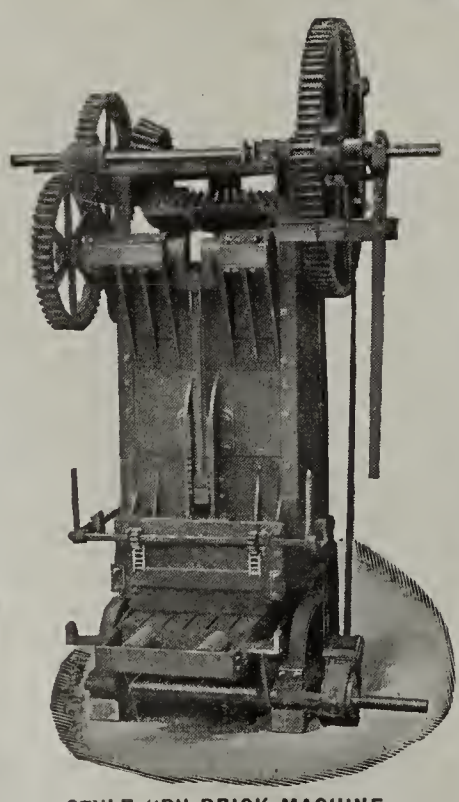

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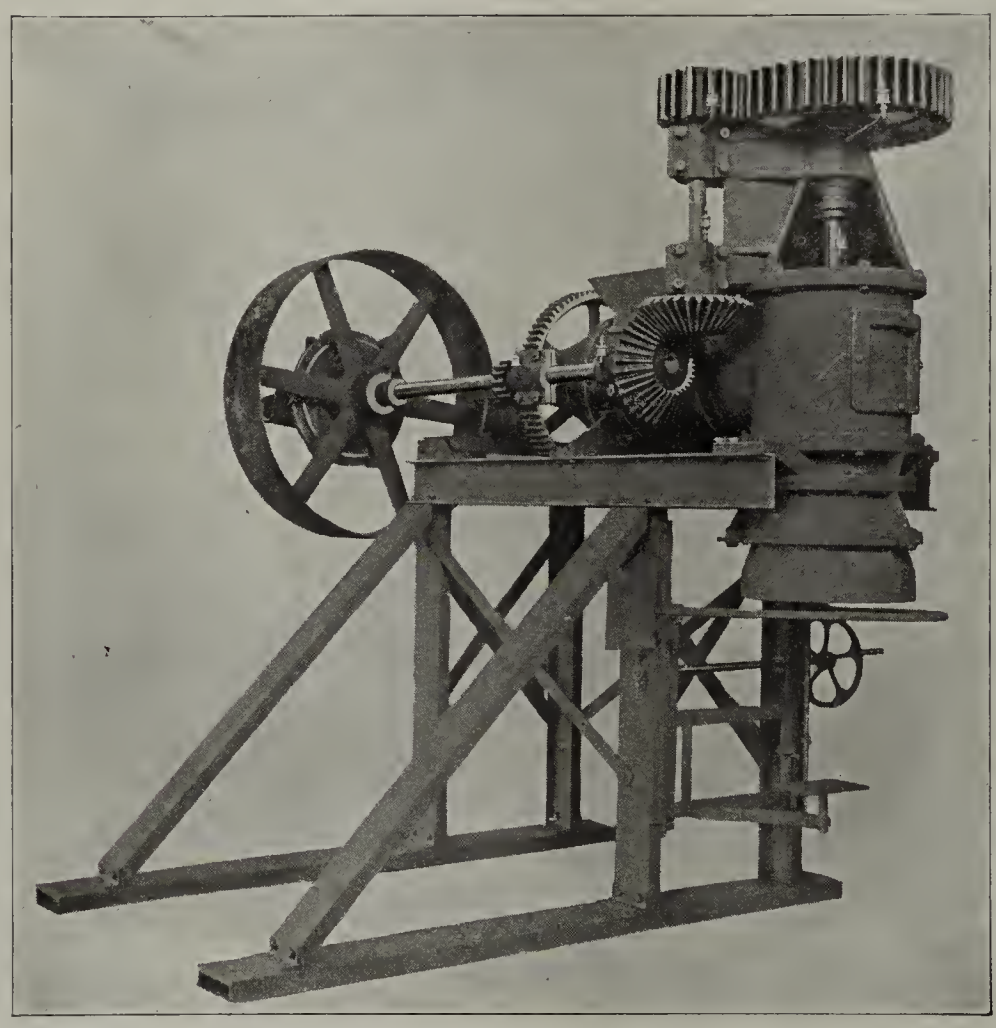

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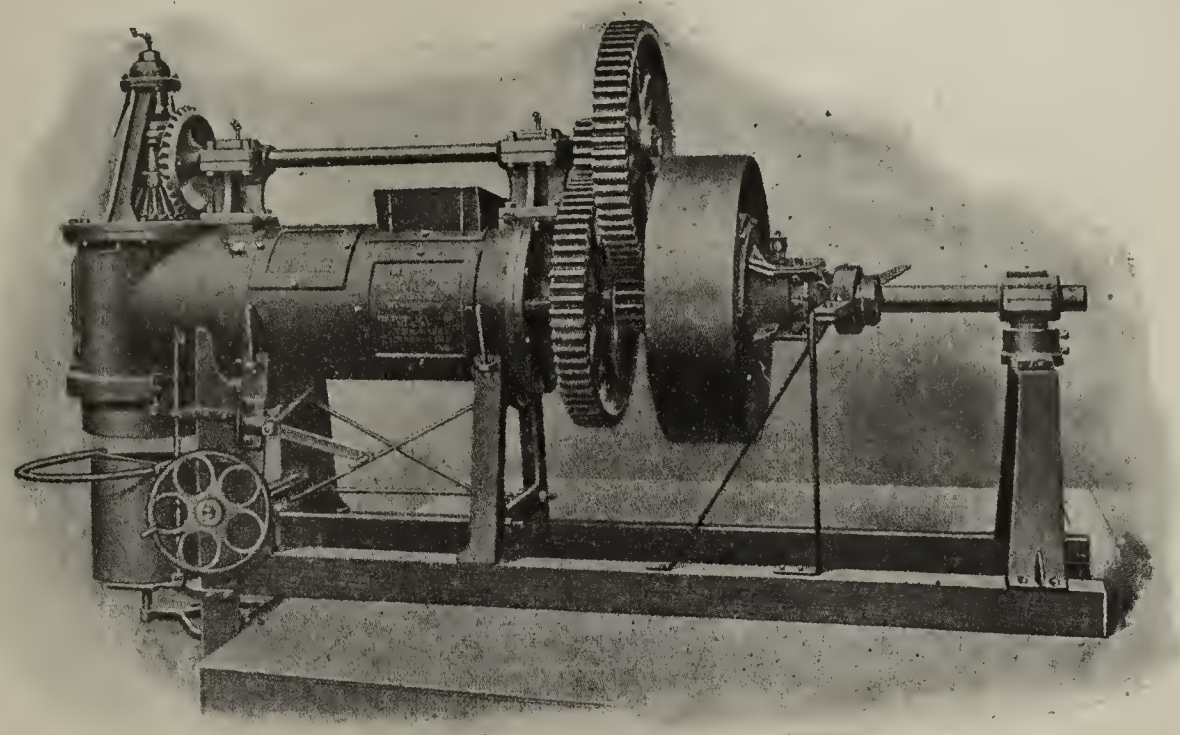

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VOL. 35 No. 9

CLAY RECORD

A JOURNAL DEVOTED TO THE DISSEMINATION OF ALL MATTERS PERTAINING TO THE CLAY INDUSTRY

November 15, 1909

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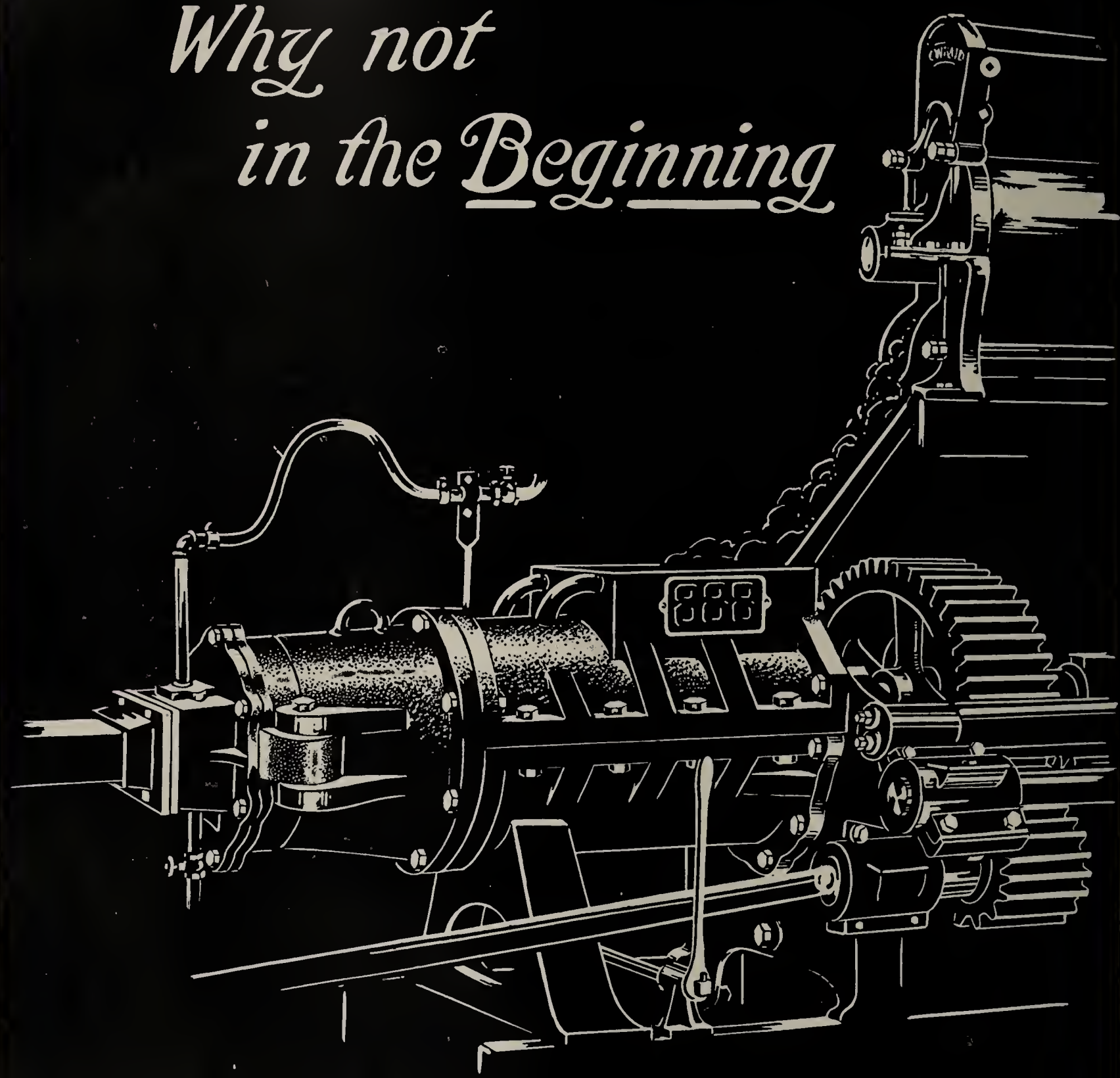
in the Beginning



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Clay Working Machinery

DAYTON OHIO U.S.A.

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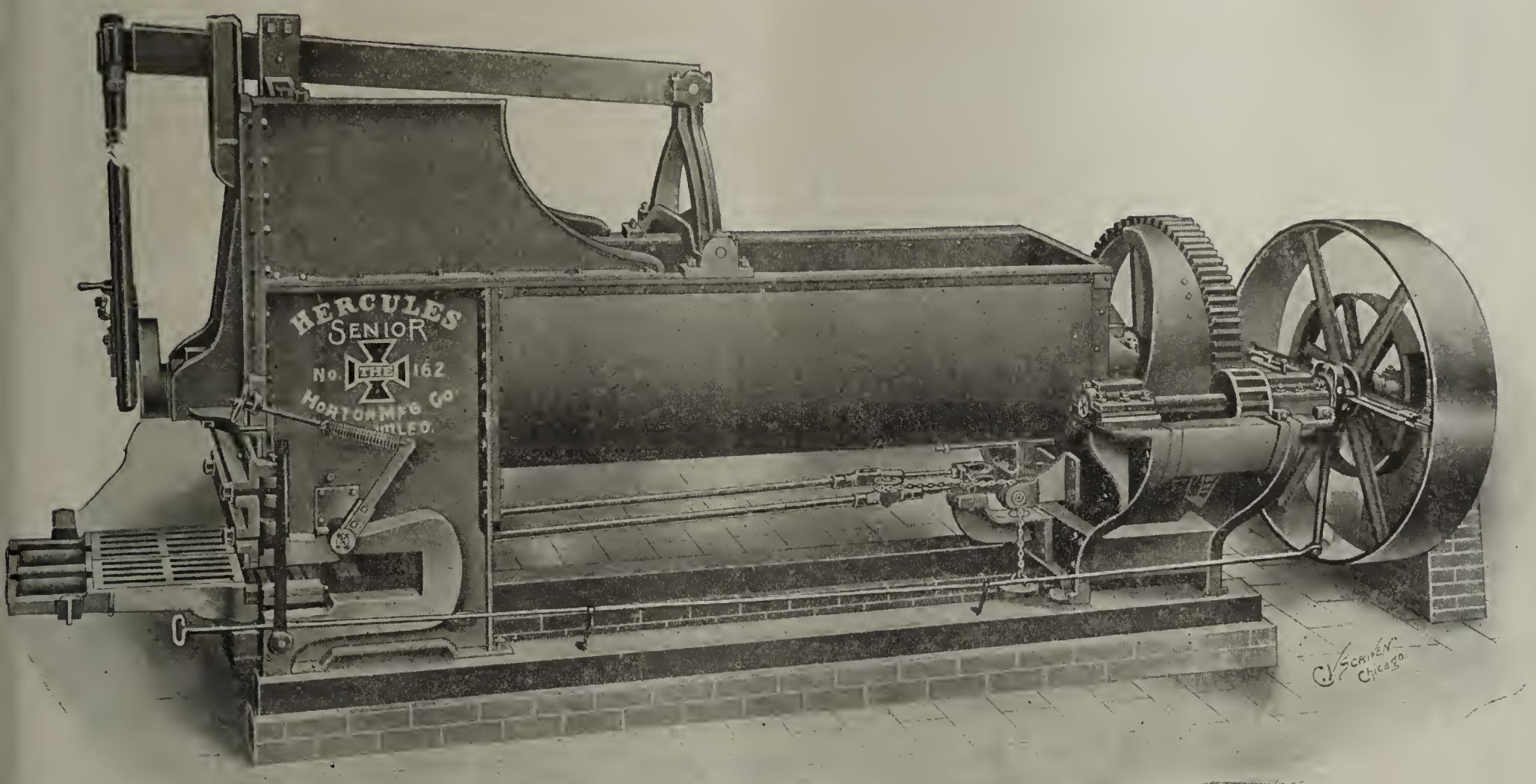

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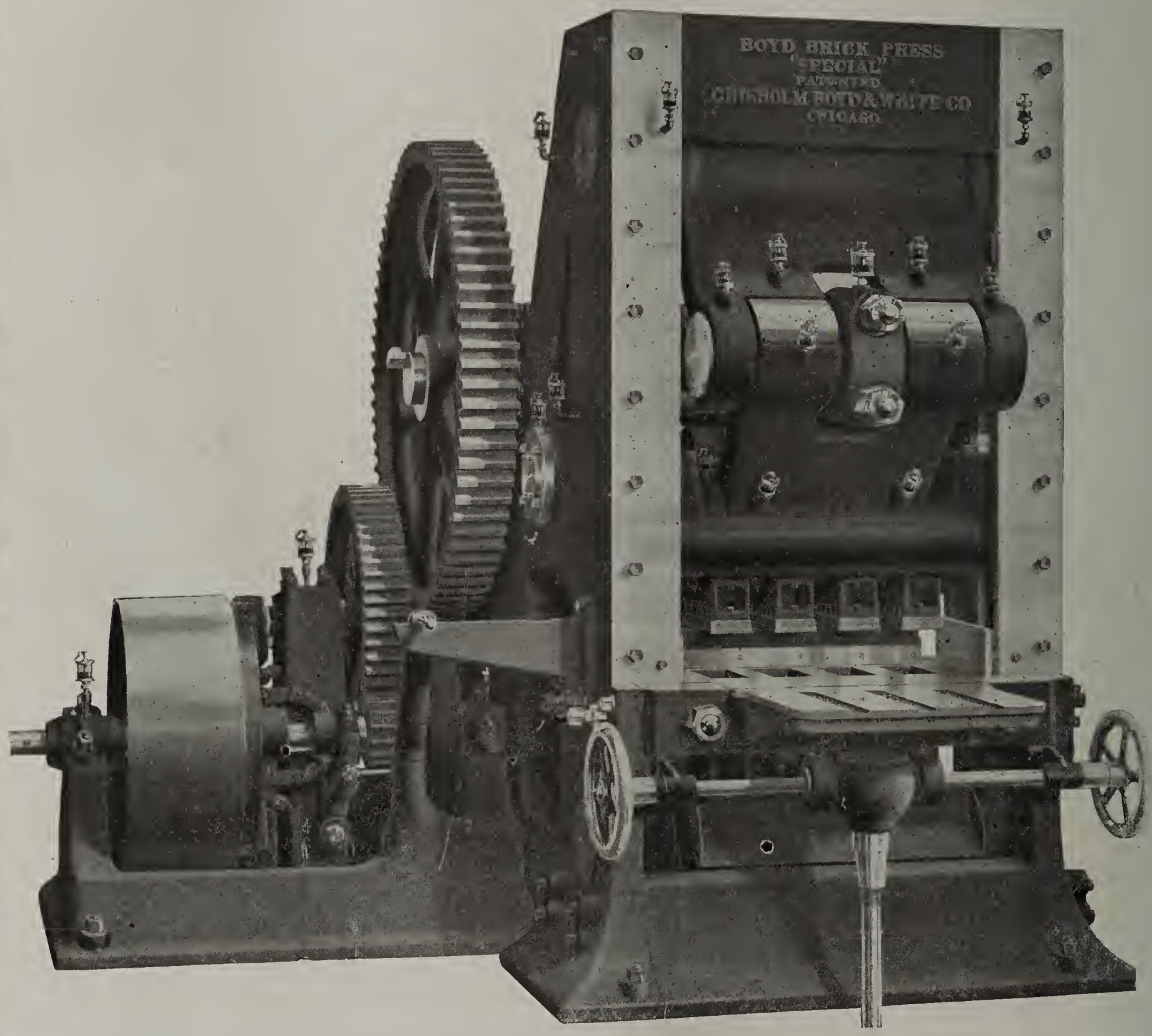

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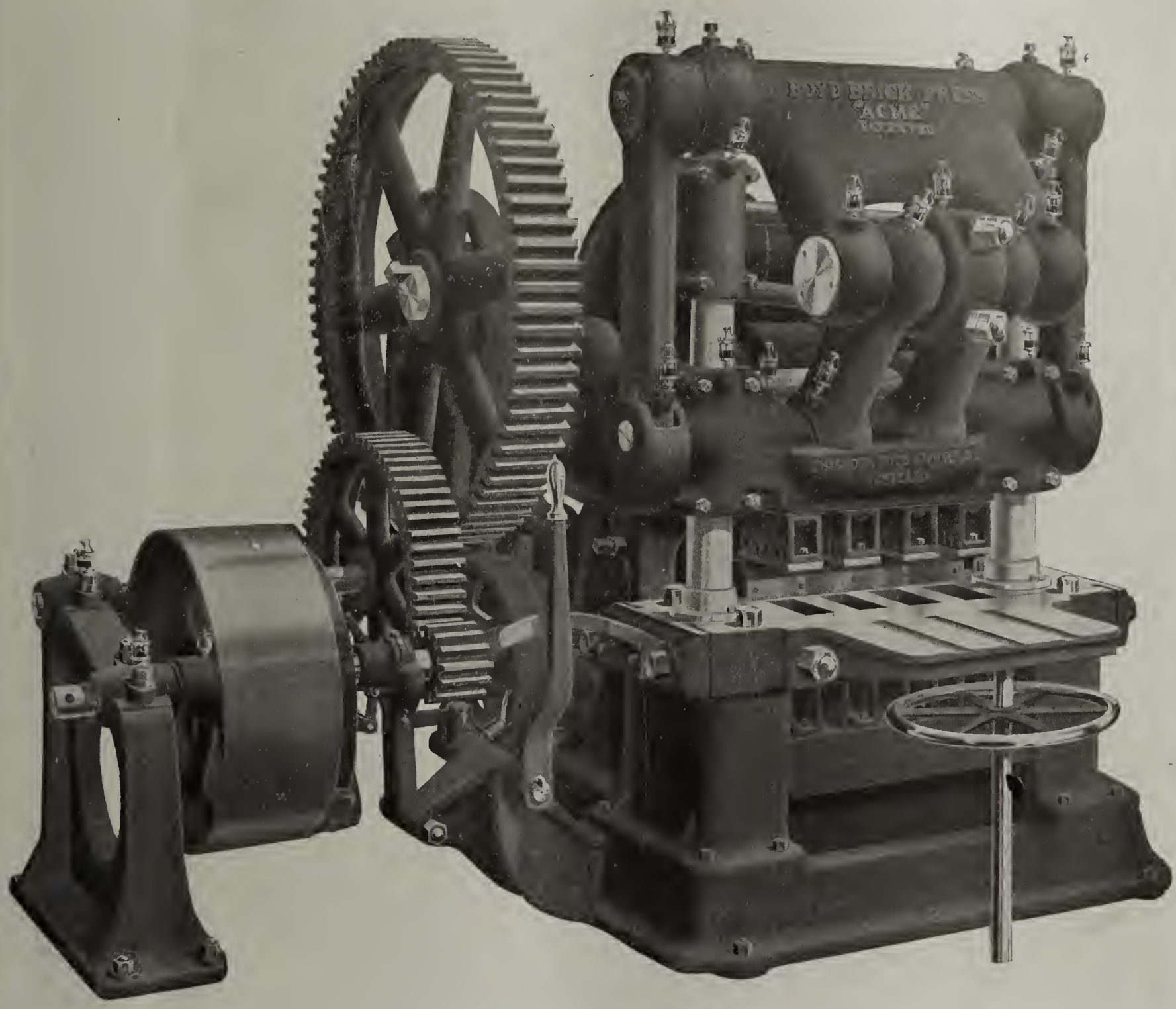

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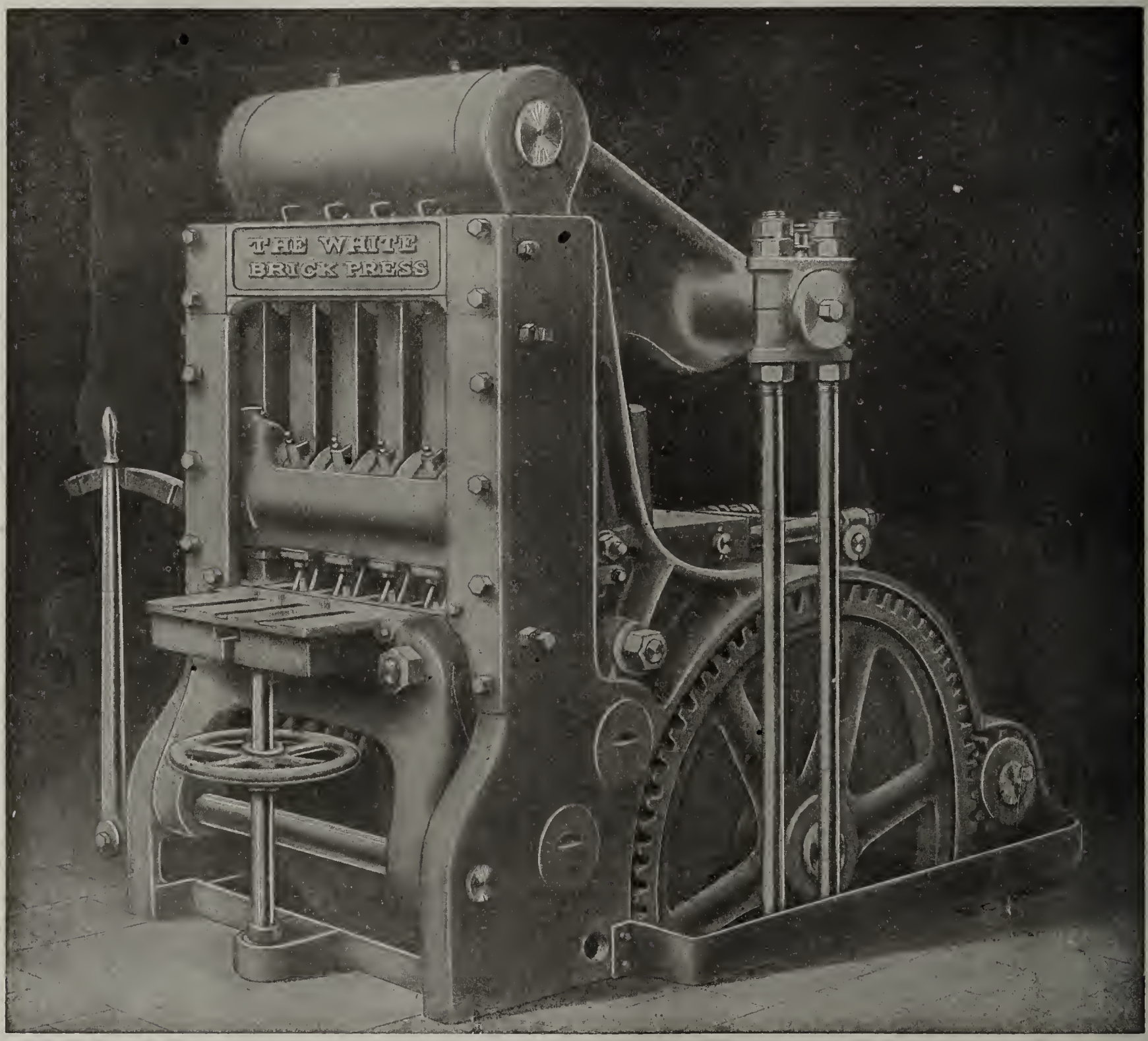

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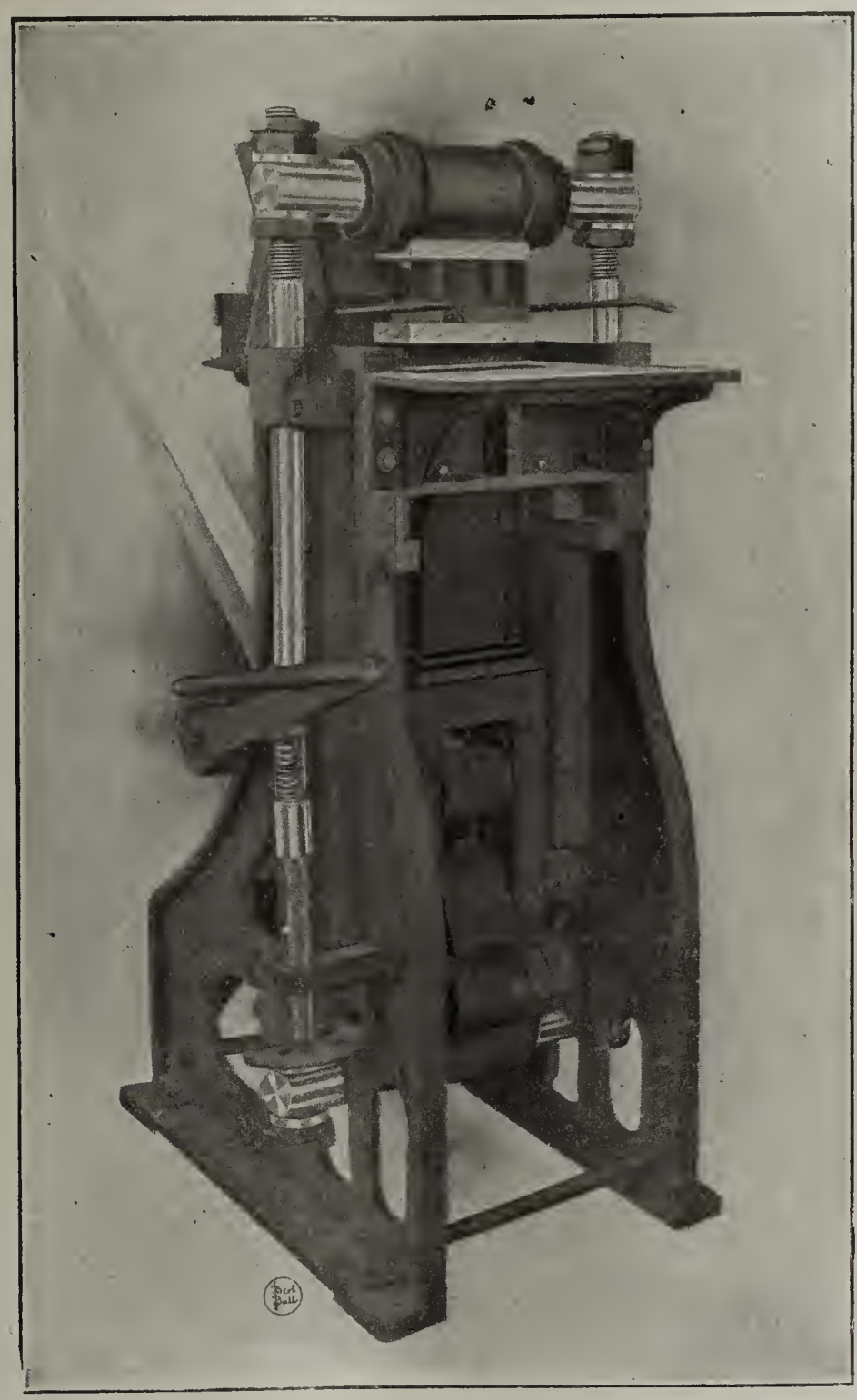
BRICKS



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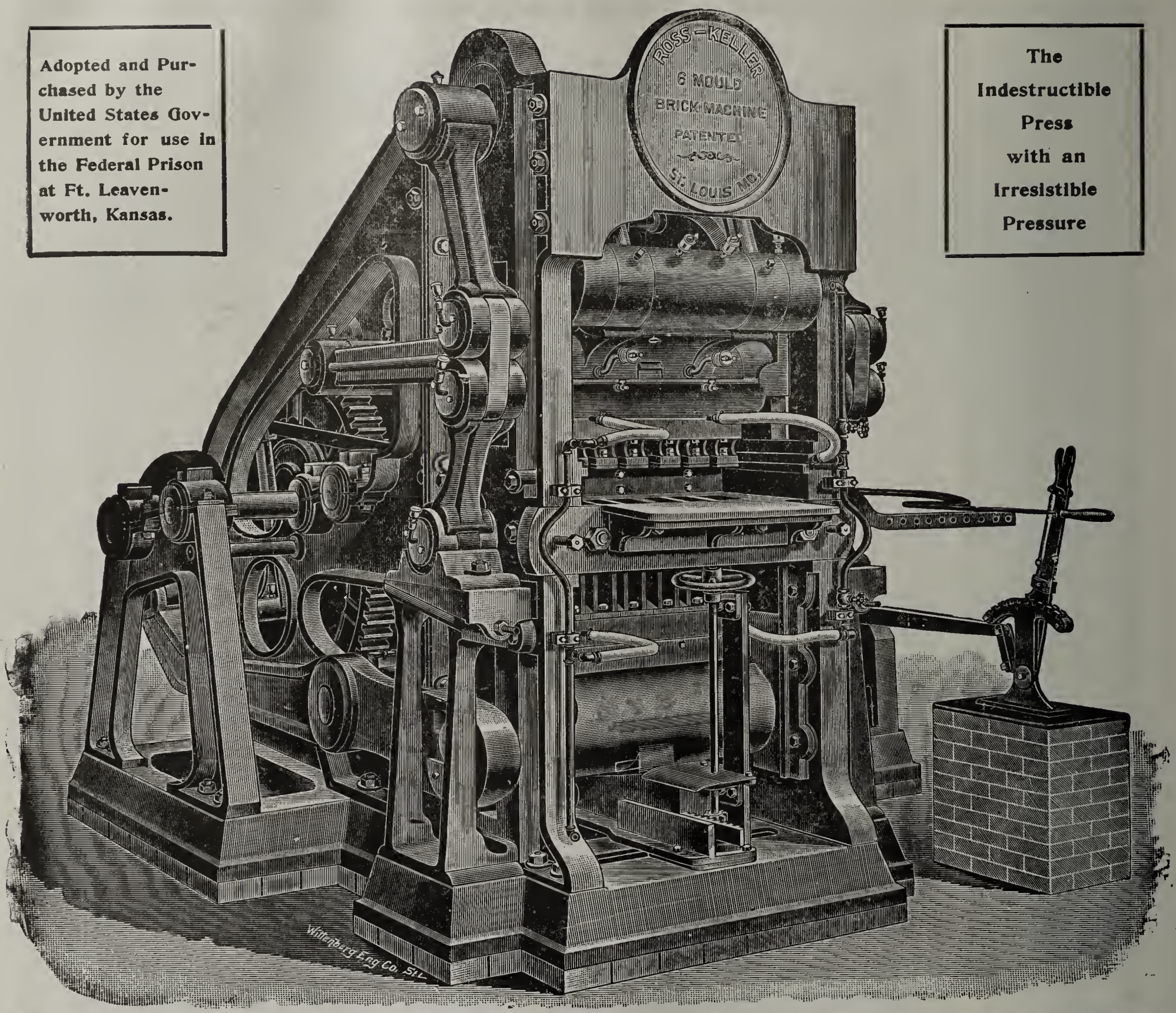

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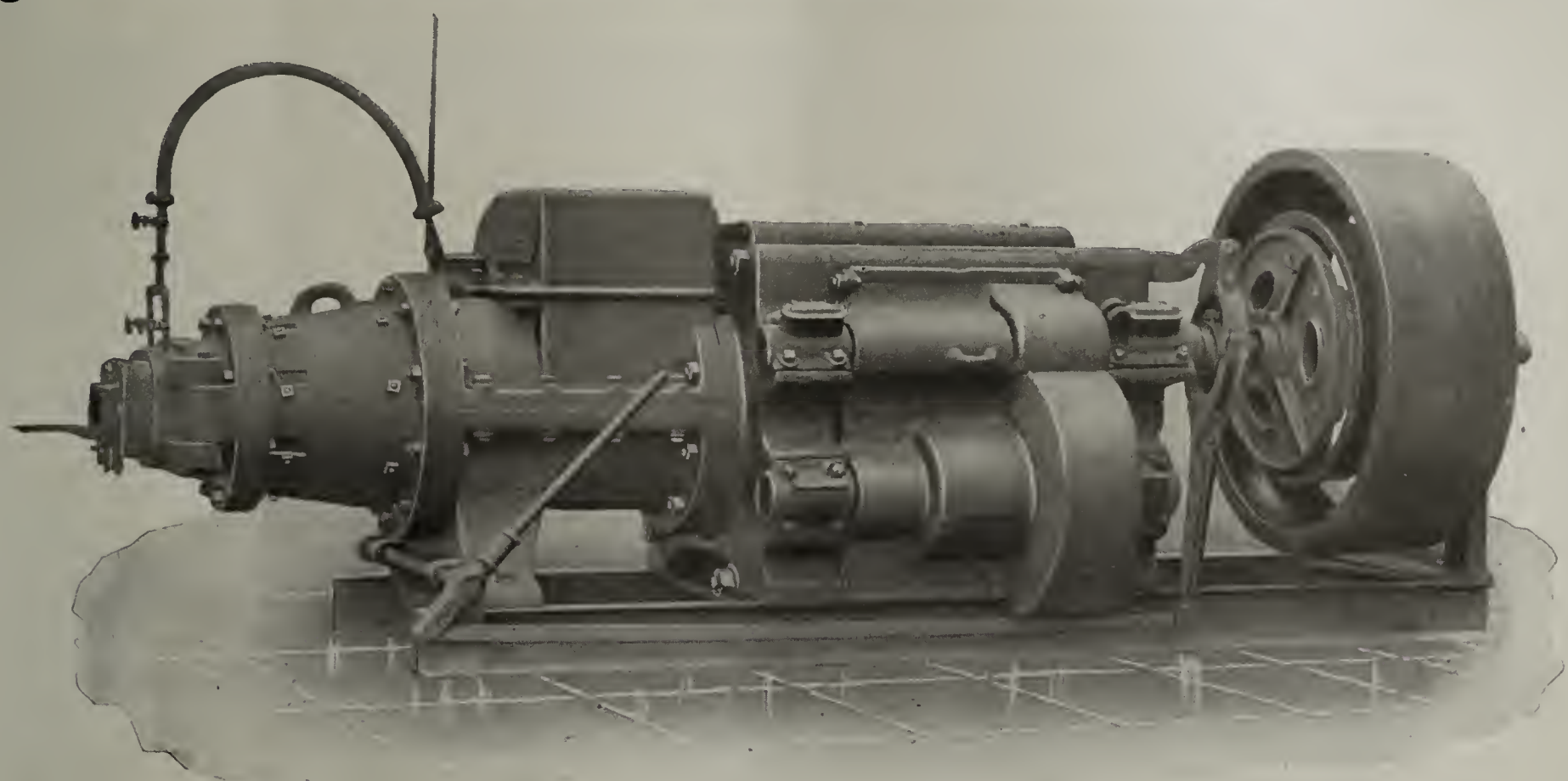

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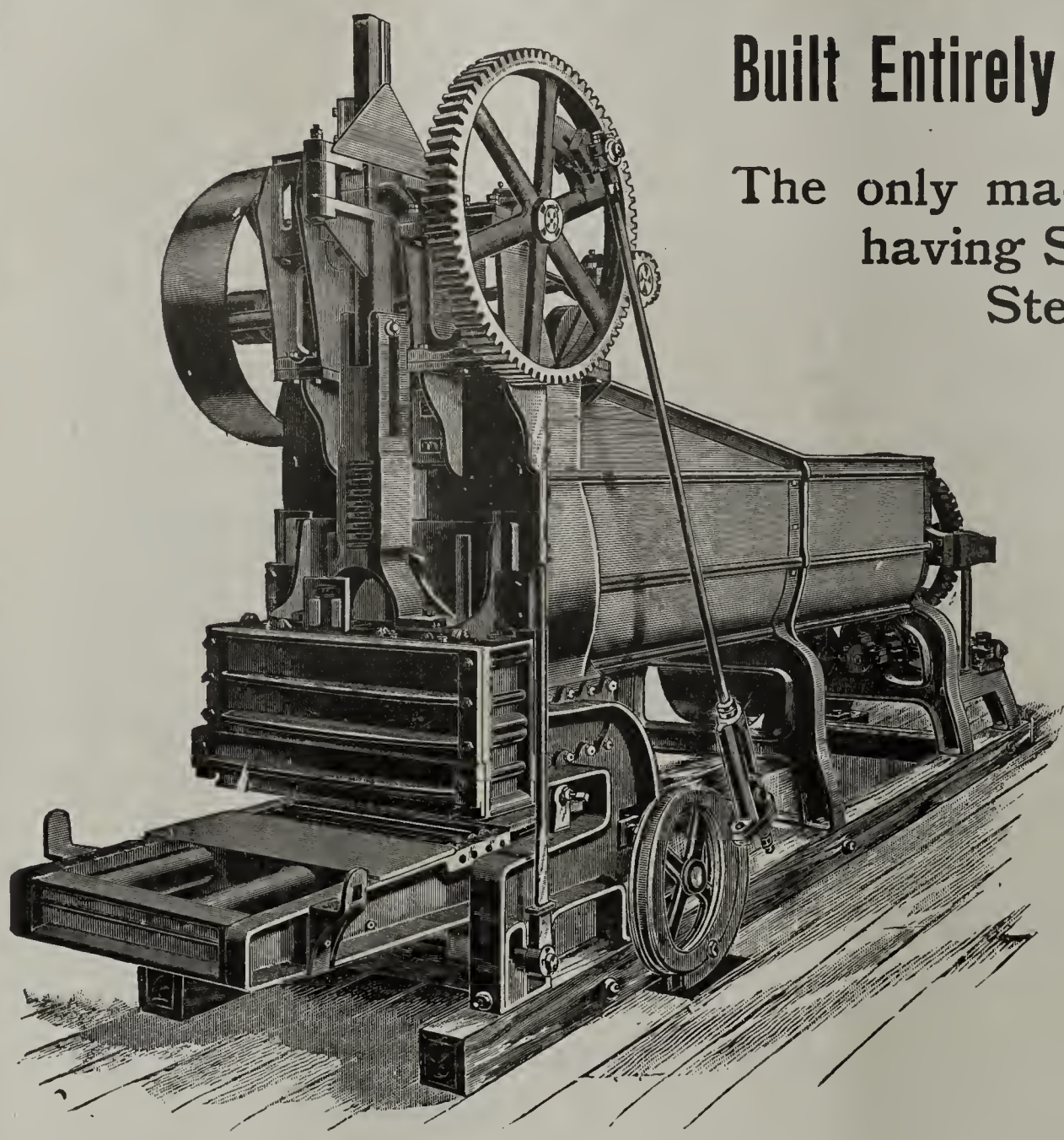

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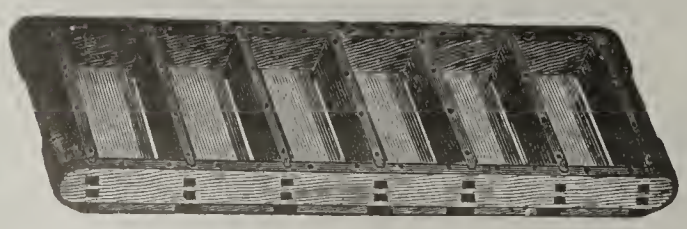

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As Manufactured by Potts

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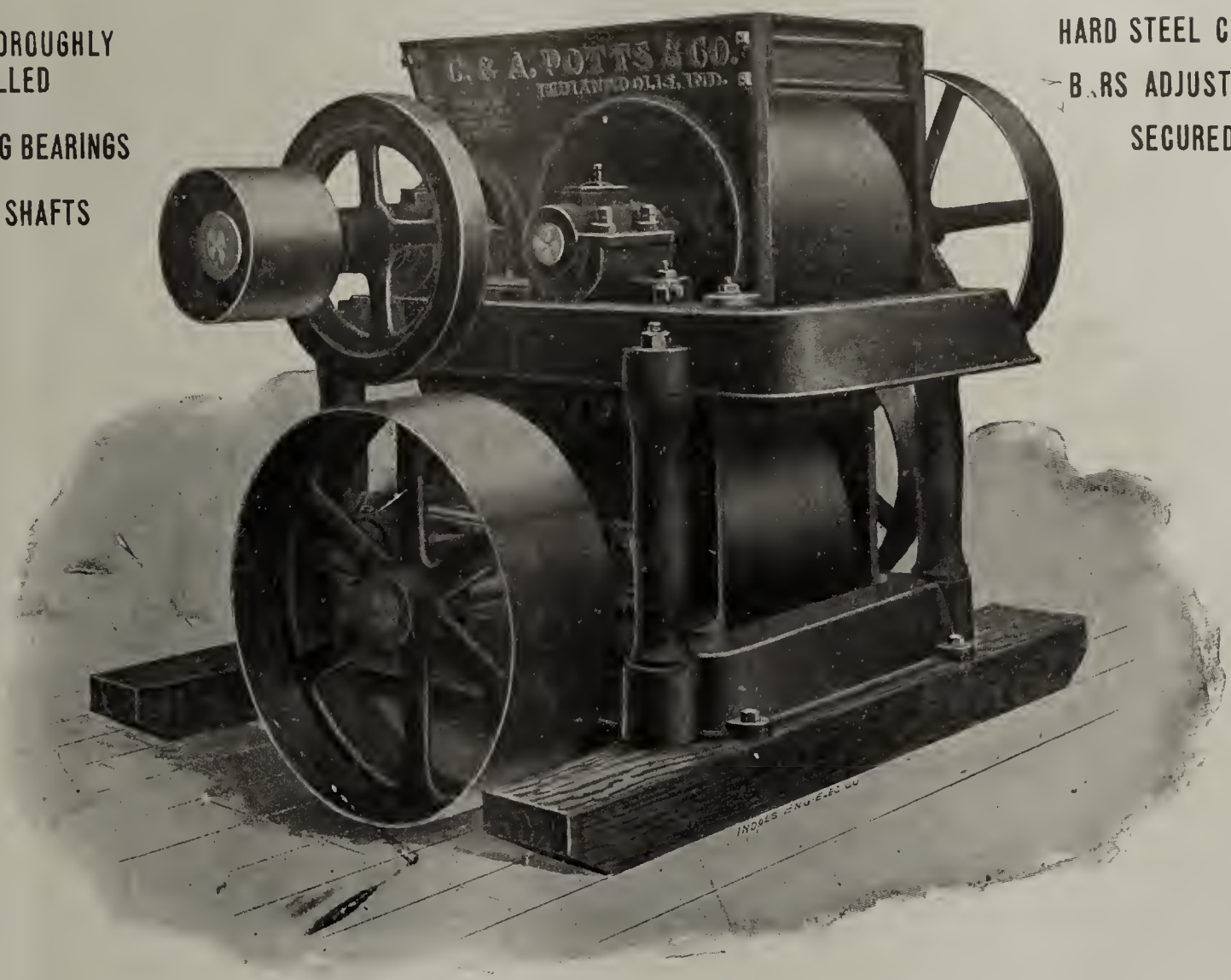

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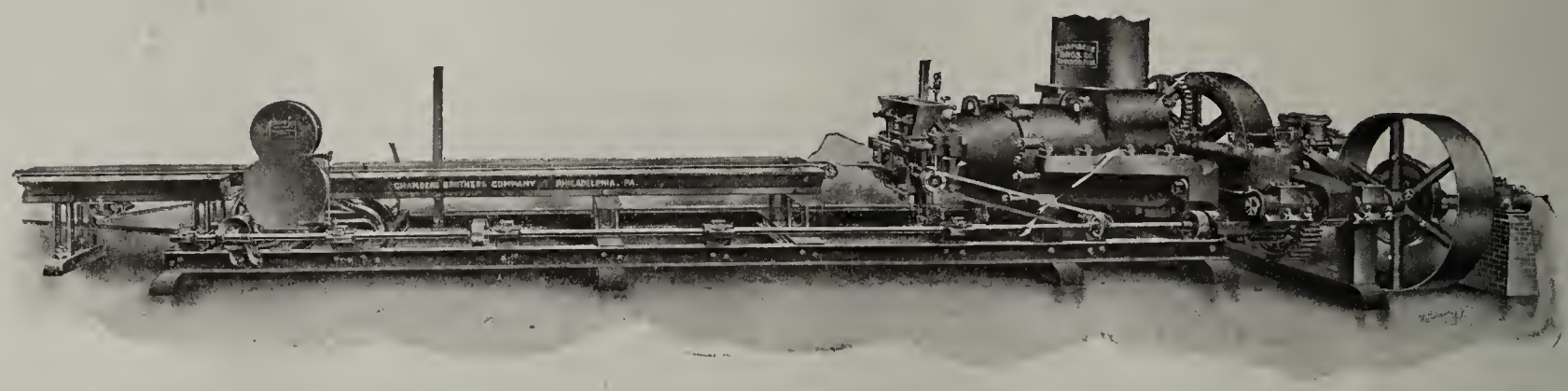

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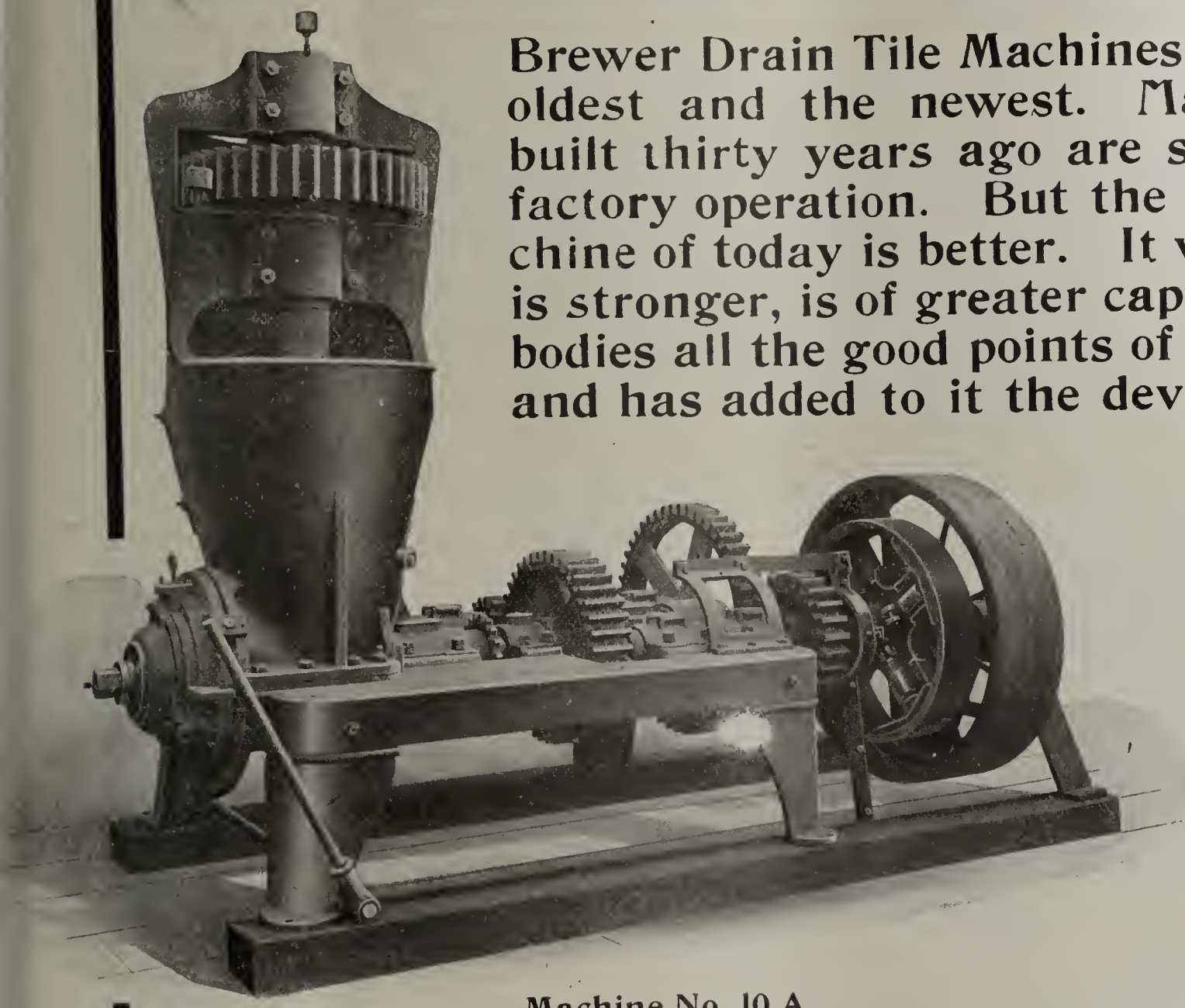

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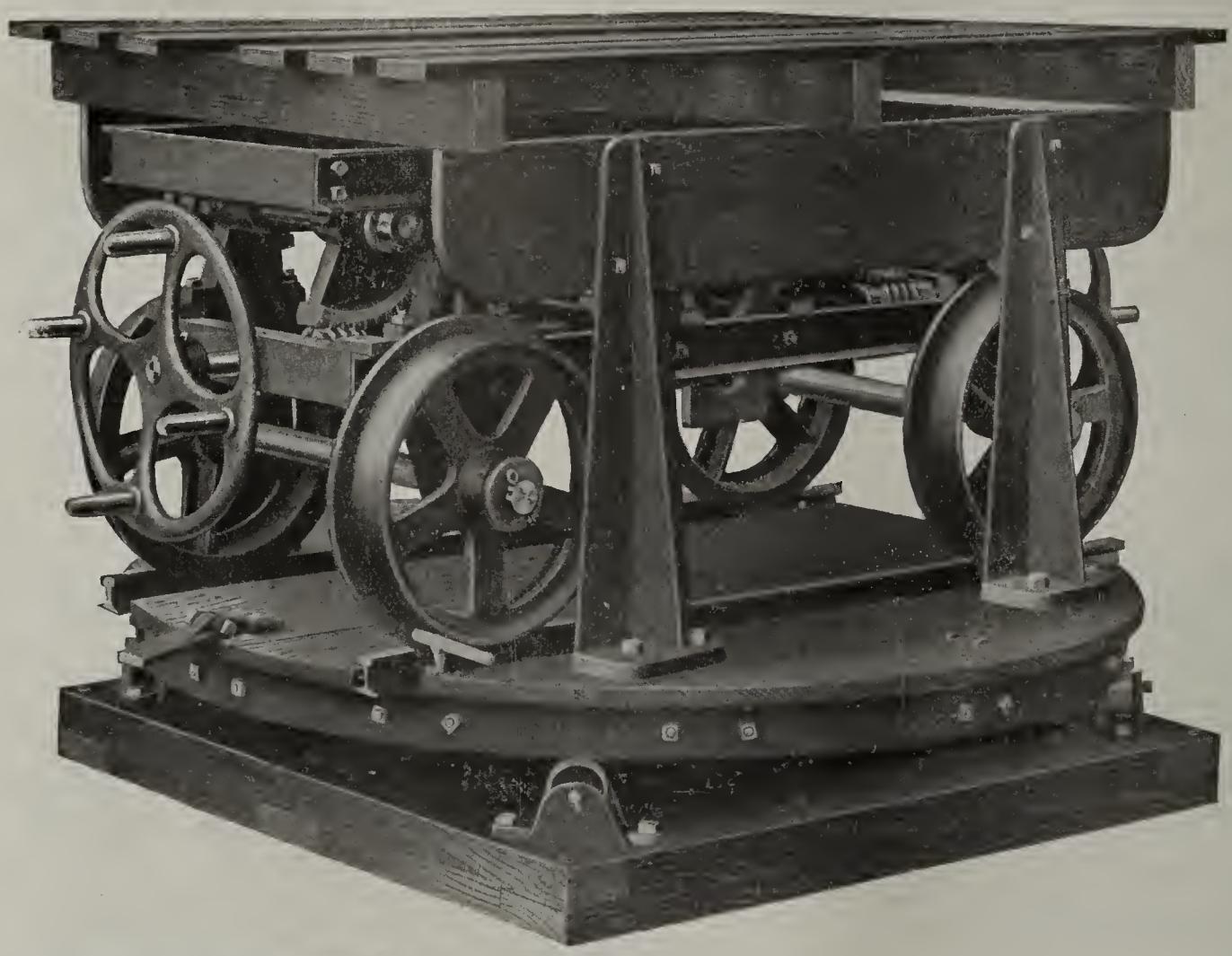

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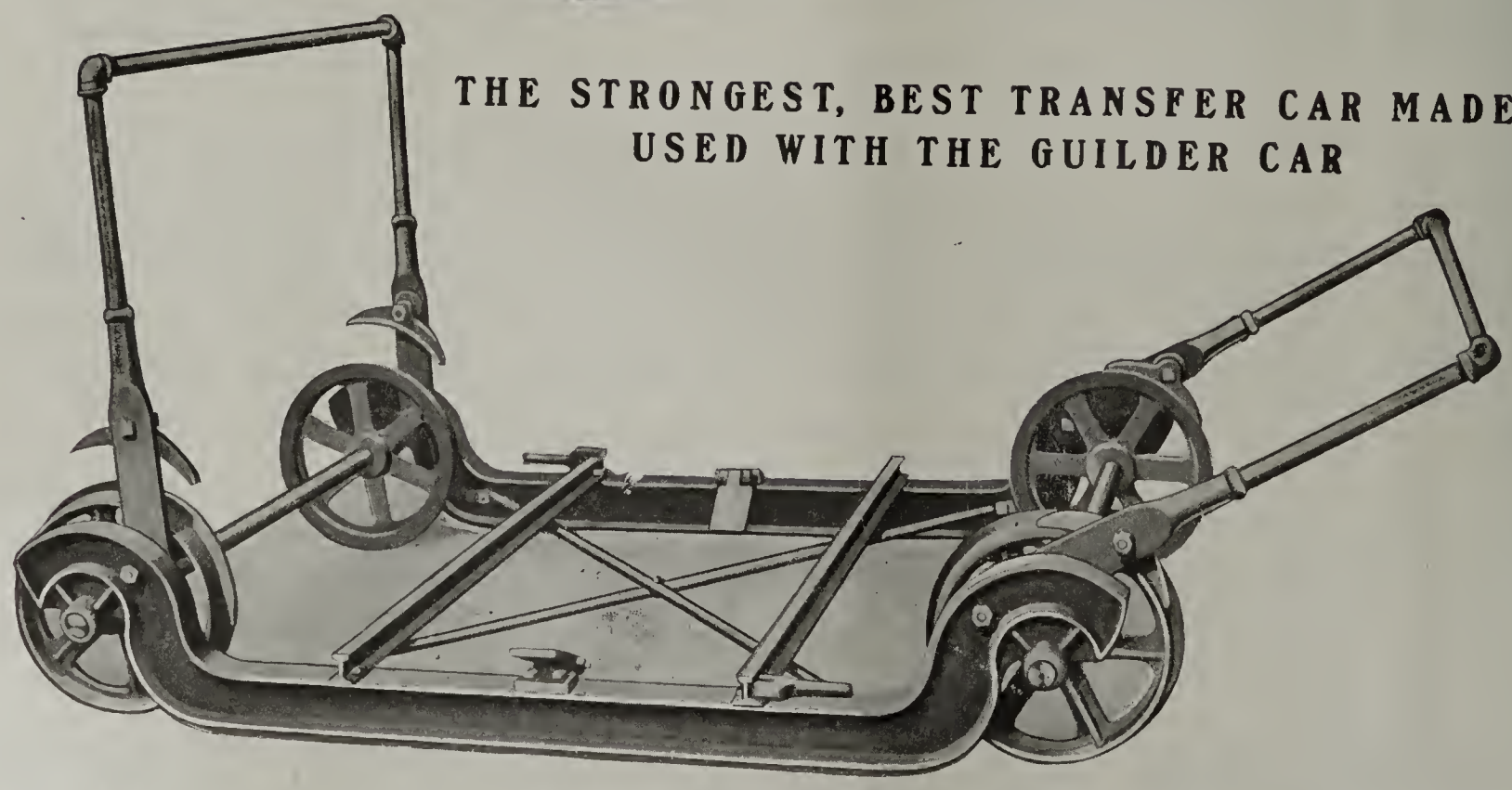


Write to the J. D. FATE CO., Plymouth, Ohio, about this system

CLAY RECORD

Entered as Second-Class Matter January 25, 1893, at the Post Office at Chicago Ill., under Act of March 3, 1879

Vol. XXXV. No. 9. CHICAGO, NOVEMBER 15, 1909 Semi-Monthly, $1.00 per Year
Single Copies, - 10 Cents

THE CLEANSING OF CLAY

By Richard Hoffmann, La Grange, Ill.

The result aimed at in the preparation of clay before it goes to the different machines or molds in the manufacture of the various forms of ware, is to reduce thé material to a uniform and homogeneous mass. Although the necessity of proper preparation of material is not as fully realized by some clayworkers as should be the case, yet it is realized by the best-informed manufacturers that one of the chief secrets in the production of the highest quality of ware is in the perfection of the processes employed in making the material homogeneous.

The oldest method employed for obtaining a fairly homogeneous clay, is by the process of weathering or exposing the material to the influence of frost, rain and sun heat, through which agencies the material is disintegrated into small particles, thus allowing a thorough mixing and tempering. By moistening the material with water and further aging in soak-pits, permitting the material to "sour," it can be still further improved according to the ware for which the clay is to be used and according to the expenditure which can, at a profit, be incurred. It is unreasonable to expect, however, that the weathering process can be employed on yards where the material must be handled in the most economical and expeditious manner.

In modern methods of the preparation of clay, various forms of wet pans and dry pans are used, the particular merits of which can be passed over in this article. Such machines, if properly selected for the particular material used, will give satisfactory service, but are not efficient in clays which are very tough or which contain pyrites, or with clays which are filled with limestone pebbles.

It has been found that neither the pit and the pugmill (even if the latter is combined in use with a powerful roller crusher), nor the pan with perforated bottom, nor the machine with perforated roller, can accomplish the desired result with certain clays, for the simple reason that none of them will eliminate lumps of fat clay or pyrites, or limestone pebbles, all of which will pass to the machines and ruin the ware. As is well known, the loss from these causes on many yards in unsatisfactory or ruined product, is very large, and manufacturers have been for some time endeavoring to find a method by which they could avoid such loss.

One method of endeavoring to overcome these troubles has been through the use of screens of various kinds. To use the screen, the clay must be piled up, dried and ground before it is passed through the screen, and the size of the mesh of the screen determined after experiments as to what size of detrimental particles can be safely allowed. It is evident that through this method, although some of the impurities may be eliminated, many of them will still exist in the clay, although in more powdered form, and if too abundant will impair the tensile strength of the ware if in the form of lime, or destroy the refractory properties if in the form of pyrites.

Perhaps the most perfect method for removing such impurities if they are not soluble in water, is by the washing process, which, as everyone knows, is an expensive and troublesome operation. This might be considered the ideal process for every clayworker if it were adjustable so that the degree of purification could be arranged to suit the purpose required, or if the cost of the process could be reduced. It can be said, however, that the washing process does not tend to make the clay homogeneous, but rather separates the various constituents into innumerable layers, and after such process it is necessary that additional mixing shall be employed to make the material homogeneous.

To the foregoing methods, which either ground the impurities to powder in order to render the same harmless or which remove the same by washing and thus prepare the green clay for further use, there has been added in the last few years the Diesener process. This process uses a machine called the Diesener clay-cleanser, which prepares clay as it comes from the bank, makes it homogeneous, and at the same time removes the impurities if they are of larger size than the quality of the goods permits.

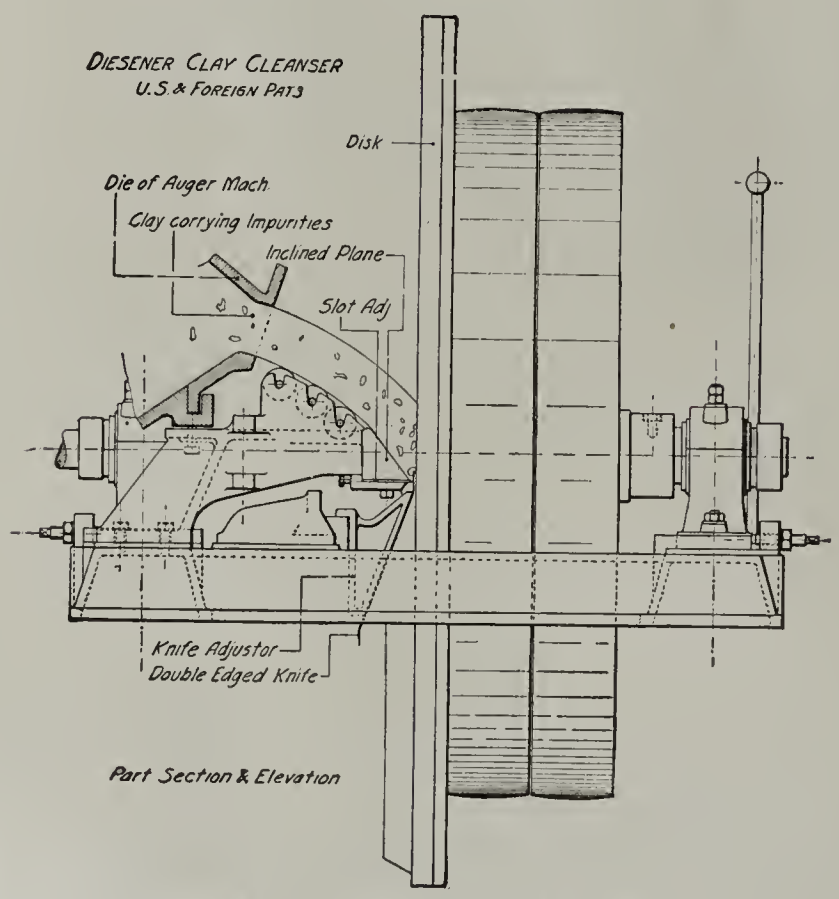
In the use of the Diesener method, the clay may be worked as it comes from the bank, without weathering, and it does not matter if it be dry or wet. The clay is first put through a pugmill to break it up, mix and water it. From this pugmill, the pugged clay falls into the hopper of an auger machine and comes out in the form of a bar. This bar of clay, still containing all its impurities, is then passed through the Diesener clay-cleanser, leaving it in a pure and perfect condition for the purpose desired. If the clay is very tough and impermeable to water, it may be crushed through a roller-crusher before being sent through the pugmill. The rolls of the crusher should be set about 1 in. apart.

The pugmill may have one shaft and be 16 ft. long, or have two shafts and a pugging-trough 6 ft. long. Either one will do, the selection being made according to the speed with which the clay slacks.

It is very advisable to select the pugmill so that its capacity is by 50 per cent greater than the capacity of the clay-cleanser. In this case the clay is allowed to soak in the pugging-trough for a longer time than if a smaller pugmill were used. The better the pugging and soaking are done, the greater the output will be under similar conditions and the less power required to drive the clay-cleanser.

I want to state right here, that the best way to prepare clay for the Diesener clay-cleanser is by means of pugmills. The pugmill cuts the lumps; "opens" the clay and accelerates the slacking, but leaves the impurities unhurt; while mixing in a common wet-pan compresses the clay and makes the clay-cleanser use more power for the same output. It also crushes down the impurities and decreases the efficiency of the clay-cleanser. For instance, instead of removing a dozen pieces of pyrites the size of a walnut, it may now be necessary to remove a hundred fragments the size of a pea or less. As it is to be understood that the whole clay has to go through one slot, one can readily see that the fifty odd fragments of a stone 1 in. in diameter, if laid in one line, may block five or ten times one inch of the length of the slot.

The auger and pugmill may be combined. If we are working a sandy clay, which slacks easily in water, a combined brick-machine with medium pugging-trough will do. For tough clays or a mixture of different kinds of clay, a separate pugmill of generous capacity will give better service.

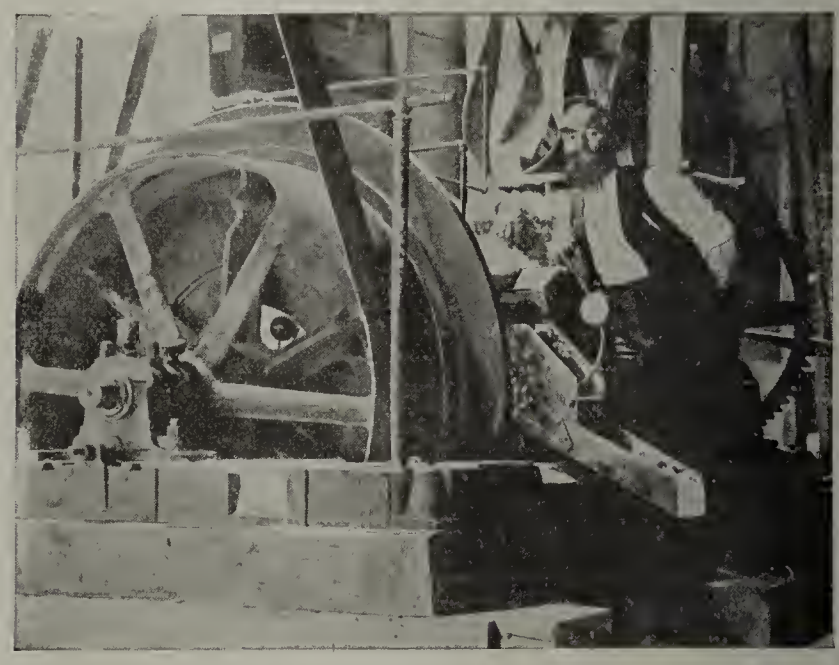


Sectional View of Diesener Clay Cleanser.

As said above, the auger machine or auger pugmill issues forth a bar of clay usually about 22x4 ins. This should be preferably in stiff-mud condition, if the clay is very plastic; or in soft-mud condition if sandy.

The Diesener clay-cleanser operates as follows. The bar of clay goes down an inclined plane and is pushed against the rotary disk of the cleanser and "sucked" by it through a slot (see sketch). The material of the disk has a greater influence upon the efficiency of the machine, as some iron alloys have been found to take a better hold on the clay than others. At present an iron is used that gives the best results on a number of various clays. The width of the slot is within certain limits adjustable by moving the slot-adjuster towards or away from the disk. The width of the slot is governed by the size of the impurities to be removed and by the percentage at which they may occur in the crude clay.

As shown in the sketch, the stones are removed by a stone-pusher or a knife, that reaches from underneath into the slot. Consequently, the knife must be thinner than the slot, and if a slot of 1-16 in. is used the knife will not be strong enough to remove a stone larger in diameter than about ½ or 1 in. Pebbles of larger size, however, may be ejected or crushed before the pugging process by a roller-crusher with the rolls set at ½ or ¾ in. This may be done if the total impurities in the clay amount to only a few per cent, but if many pebbles are in the clay, this crusher would decrease the output of the cleanser too much. In this case it is more economical to use two



The Diesener Clay Cleanser in Operation.

Diesener machines in series, the first with a slot of ¼-in. for removing the coarse stones, and the second with a slot of 1-16-in. for the smaller impurities.

It may be found sometimes, that a slot of 3-16-in. or ¼-in. is sufficient to purify the clay, on account of its being practically free from impurities of smaller size. The advantage of using the wider slot and thus securing a larger output, may more than compensate for the occasional loss of a brick spoiled by a particle of limestone that has been allowed to remain in the clay.

While the lime pebbles may not do so much damage in a brick, their occurrence in sewer pipe or terra cotta might be seriously detrimental. Therefore, manufacturers of clay goods of a better class cannot afford to jeopardize their profits by taking chances, and must use a slot of 1-16-in.

As soon as the clay passes the slot, it drops in the shape of shavings or snow flakes; or, if it is so wet as to stick to the disk, it is thrown off by an attached scraper.

These clay-flakes show a remarkable phenomenon: It is often that flakes having gone through a 1-16-in. slot "swell" so much as to make it appear that the slot is as wide as 3-16 in. The Diesener clay-cleanser therefore tends to make the clay "long" and more plastic than it was before.

From the Diesener machine, the clay goes either into the hopper of the press or into the auger of a second Diesener cleanser.

A complete outfit for preparing and purifying the clay according to Diesener's method will have to be selected according to the clay and the character of the goods, and might consist of the following combinations:

1. One auger machine and one Diesener clay-cleanser, for a clay which slacks easily and which will be suffi-

ciently purified by passing a slot 3-16 or ¼ ins.

2. One auger pugmill and one Diesener clay-cleanser for a tougher clay; slot the same (about 3-16 or ¼ ins.).

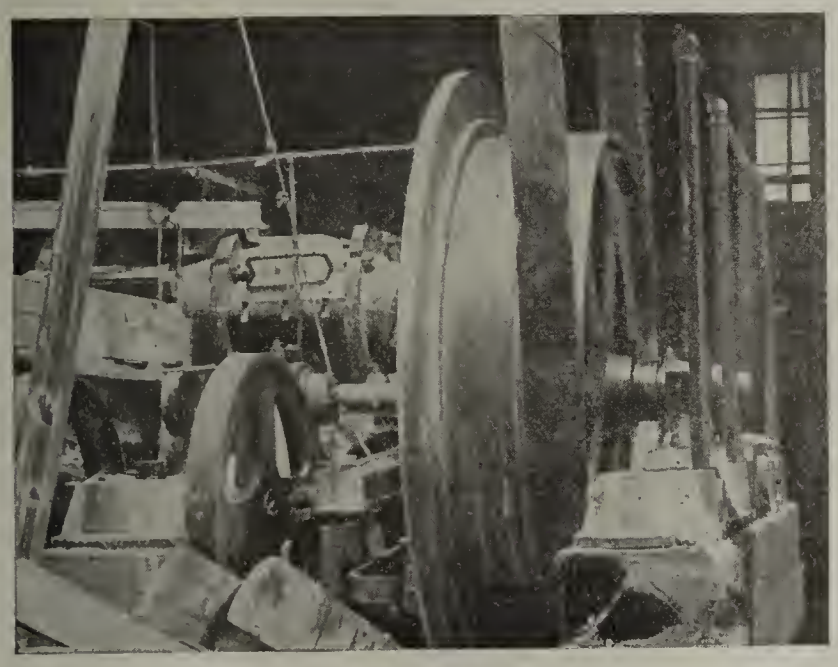
3. A roller-crusher, rolls set apart ⅜ in.; an auger pugmill and Diesener clay-cleanser, for clay containing only a few per cent of impurities, these being more than ⅛ in. smallest diameter; slot adjusted ⅛ in.

4. One auger pugmill with Diesener clay-cleanser having a slot ¼ in.; and another auger with Diesener machine having a slot of 1-16 or 3-64 ins.

The last arrangement will prepare almost any clay with an average amount of dirt. It is seldom that conditions make advisable the use of more than two Diesener machines in series.

There is scarcely one phase in the process of manufacturing better clay goods, which deserves more attention on the part of the works manager, than the manner in which the crude material is prepared. It is here that the Diesener clay-cleanser will yield savings; not only considered for itself in comparison with other preparatory machinery, but because it will eliminate troubles along the whole process. For example, by preventing the presence of the stone, it has also prevented the blocking of the die; the breaking of the wires of the cutter; the cracking of the goods in the drier, or their exploding in the kiln. Laminations are absent in clay that has passed a slot of 1-16 in. The Diesener process facilitates the drying of clays, which otherwise prepared, dry very slowly.

The Diesener clay-cleanser not only equals the wet-pan in the thoroughness of mixing, but in addition it purifies the material. While the pan works intermittently and requires from two to three men to operate it, the Diesener clay-cleanser works automatically and continuously. Since it has been admitted by more than one irate manager, that his pans do not smash the gravel or lime or pyrites pebbles to a smaller size than ¼ in., one Diesener clay-cleanser working with ¼-in. slot would prepare as much as three pans of 9-ft. size and save three times over the services of two or three men; and instead of requiring 25 to 40 h. p. for each of the three pans, it will require only from 6 to 12 h. p. for the cleanser itself, to which must be added from 15 to 25 h. p. for the auger pugmill. Last, but not least: It will actually remove the dirt instead of merely pulverizing it.



Diesener Cleanser at a New Jersey Plant.
This Machine, Under Test, Purified Clay at the Rate of 10 Tons Per Hour Through a Slot of 1/16 inch.

Compared with the washing process, the Diesener clay-cleanser method reaches a degree of purification that would suffice under many circumstances even for the manufacturer of earthenware, stone-ware, or paving tile. For these clay goods it would be necessary to use an outfit as specified under No. 4. This outfit would give from about 100 to 150 or more tons per day of 10 hours, if operated with a slot of 1-16 in., or about 60 to 90 tons, if operated with a 3-64 in. This outfit, of course, could not remove every small bit of a pyrite, but a pyrite that passed through a slot of 1-16 or 3-64 ins. would scarcely be able to do any harm.

But then the Diesener clay-cleanser would leave in the clay all the valuable ingredients,—the sands of quartz or feldspar, which give the "backbone" to the goods and which, once separated from the clay, must be mixed into it at great expense, but nevertheless rather imperfectly.

Figured on the output, the installment, as well as the operating expense of the Diesener method, could be compared very favorably with the washing outfit, as the only expense which the Diesener clay-cleanser involves is a trifling one for the knives, which on no account would reach the cost of the filter-cloth.

The Diesener clay-cleanser requires no more oil than any other brick machine. The above-mentioned knives can be made of hoop-iron, and the disk has to be faced one or two times a year. While in some places the disk lasted only three years, there are other factories where they estimate that they will use the same disk for eight or ten years.. An automatic facing equipment accompanies every first machine.

The results which has been obtained in some of the most famous factories in Europe entitle the inventor, Mr. H. Diesener, to claim for his method, that on plastic surface clays not only does the Diesener clay-cleanser show a marked saving over other processes in operating expenses, but, as compared with any installation that will do the same work and at the same rate and to the same degree of perfection, the Diesener clay-cleanser has the lowest first cost as well.

ENGLISH CLAY INDUSTRY DULL.

Consul Frederick I. Bright, of Huddersfield, cites the following as indicative of the conditions in certain clay-working industries of England.

British official returns for 1908 show 816 failures in the building trades, with a total liability of $3,836,539. In the grocery and provisions trades only were there as many failures, but the liabilities were smaller, amounting to $2,928,445.

At a recent meeting of a large clay-working company, owning a branch establishment at Huddersfield and manufacturing products for use in the building trades, such as bricks, "pipings," baths, and other sanitary supplies, the following facts were made public: During recent years there has been a gradual decline in the company's business. In the last six years production decreased £150,000 ($729,975) and was, during the last 12 months, £200,000 ($973,300) less than in the company's most prosperous year. During the same period the annual working expenses had been reduced about £10,000 ($48,665). Notwithstanding the fact that the home trade was well organized to prevent competition, selling prices had gradually fallen, and in one line were 20 per cent lower than in 1903. The only branch which gave satisfactory results was furnace linings and similar articles for the iron and steel trades. Trades with a few foreign countries was fairly good, but the home and colonial markets were very depressed.

It is estimated that not more than 50 per cent of the productive power of this industry for the entire country is employed today.

BUILDING REGULATIONS

By F. W. Fitzpatrick*

Hundreds of cities are now revising their building regulations, or writing new ones, or have just put amended ones into force. It is well. It shows that the great fires of the past few years have not been wholly unfruitful lessons. Our people are awakened to a realization that something must be done. They are tired of having their lives and property constantly in great peril, and the while paying out nearly $300,000,000 a year for fire department and private protection and $200,000,000 a year to the insurance companies in premiums, while over $215,000,000 of property goes up in smoke every year! They realize, too, that prevention is what is necessary. But they are afraid to apply it thoroughly and completely. They go at the building regulations in a half-hearted way and seek not to devise and apply what is really needed, what is necessary, but merely what "the people will stand for."

That is the ridiculous phase of it. No sooner is it suggested that better buildings will be required than there is a great howl, people declare the cost of building will be excessive, improvements cannot be made, it will be a hardship upon the poor man and all that sort of thing, which, in plain language, is pure rot. There has always been opposition to progress, the locomotive and the automobile were fought by the horse-dealers, telegraph and telephone were opposed. So with better building, it is opposed by the shysters who profit by poor building, the speculative builders, the jerrymen who build just so that a house stands up until they can sell it, and they have been shrewd enough to make the people generally believe that safe, reasonable building regulations were really burdensome!

Perfect building is absolute economy; good building is sensible and shoddy construction is positive extravagance. That basic fact must be remembered in devising regulations. A city full of good buildings means lessened maintenance cost, for each owner, fewer repairs, a longer life for the buildings, (and in consequence lower rents would obtain) much less expense for fire departments and water protection and the very minimum of insurance rates and premiums, safety of life and property. It would mean millions upon millions of dollars saved and a great municipal problem solved. People should clamor for the most exacting requirements; on the contrary, they have been lied to and deceived until they really believe that the half-way measures we do apply are too severe. And our cities have been so "considerate" of the shyster-builders and have made so few exactions that until very recently people have been allowed to build just as they pleased—and, strange, but they have usually "pleased" to build only as well as the laws compelled them to—with the result that our cities are filled with tinder-boxes and fire-traps, and every year or two, a third or a half or a quarter of some city or other is entirely destroyed and day after day individual fires occur that wipe out nearly $1,000,000 of property at one fell swoop, not to mention that 2,000 or 3,000 lives are destroyed every year and over 30,000 lives imperilled every day. It is rank idiocy, imbecility, worse, it is a shame and a crime!

Spite of this senseless opposition on the part of the uninitiated—an opposition that can only originate with and is abetted by the worst type of shyster-builder—our building departments must valiantly fight for the most stringent building regulations. In that way lies safety and real progress for our cities.

A first class city can only be an aggregation of first class buildings. Therefore in at least the congested districts only perfect construction can be tolerated, the complete and total elimination of the combustible in building materials. More than that, materials that are incombustible but nevertheless damagable by fire must be protected from fire. Not a particle of structural steel must be left exposed, nor should structural concrete be left exposed. That is, in reinforced concrete construction there should be not only enough concrete used to carry the load but an additional two inches or so of concrete should be added to protect that structural portion from damage by fire. The stories must be closed off one from the other, and even each story should be subdivided to make as small units of space as practicable in which fire may originate. Windows must be protected.

I contend that if perfectly built and with the necessary fire-fighting appliances individually installed, buildings may be built as high as owners desire, provided that the streets be not deprived of sunlight and air. This may be accomplished by stepping buildings back, so many stories on street line, so many stories above that to be built back so many feet from front, and so on, up as high as one wishes.

All buildings, new and old, of public or semi-public nature should be conspicuously and officially labeled, just what classes they belong to, "First Class," "Second Class," "Dangerous," etc. That will keep the building department alert in properly classifying the buildings and will keep owners from falsely claiming that their inferior and dangerous buildings are "fire-proof."

Then the department should make every effort to have the tax system so amended that there will be a scale of rates rather than a flat rate. The owner of a first class building requiring the minimum of fire protection and expense on the part of the city, should pay a lower rate of taxes than the owner of the fire trap for whose benefit and protection, and the protection of the neighboring property he endangers, the expensive fire departments have to be maintained. That man should pay the maximum rate of tax. Further the building departments should try to influence the insurance companies to create the "neighboring-risk" that exists in most European cities, whereby the individual becomes amenable for the damage done to other than his property through his neglect or carelessness. In other words, if fire extends beyond a man's own premises, he would get but part of his insurance. In Europe this works to a charm, people become most careful where they deposit ashes and waste paper and cotton waste, and all those fire breeding things are kept in fire-proof receptacles. It makes a man careful. We need it, for our Americans are proverbially and actually the most careless people on earth. Many people will clamor for as restricted fire limits as possible; the building departments should clamor for as wide limits as possible. That is wise provision, real conservatism. It is only a question of a few years when the existing fire limits of any city have to be extended. Then they take in all the second class buildings permitted under the old regulations, these old ones endanger the new buildings, and the latter have to be superlatively well built to withstand the adjacent fires that are sure to rage all about them in the old buildings. We must all realize that, with as rapidly growing a population as ours is, the town of today is the city of tomorrow. Every one of our cities is now suffering from an inheritance of fire traps handed down by previous generations. The city that would make its fire limits comprehend all of its corporate extent would indeed be a sensible city, a really first class city. But it is hardly to be expected that any one of them would show that much intelligence all at once, therefore it is up to the building department

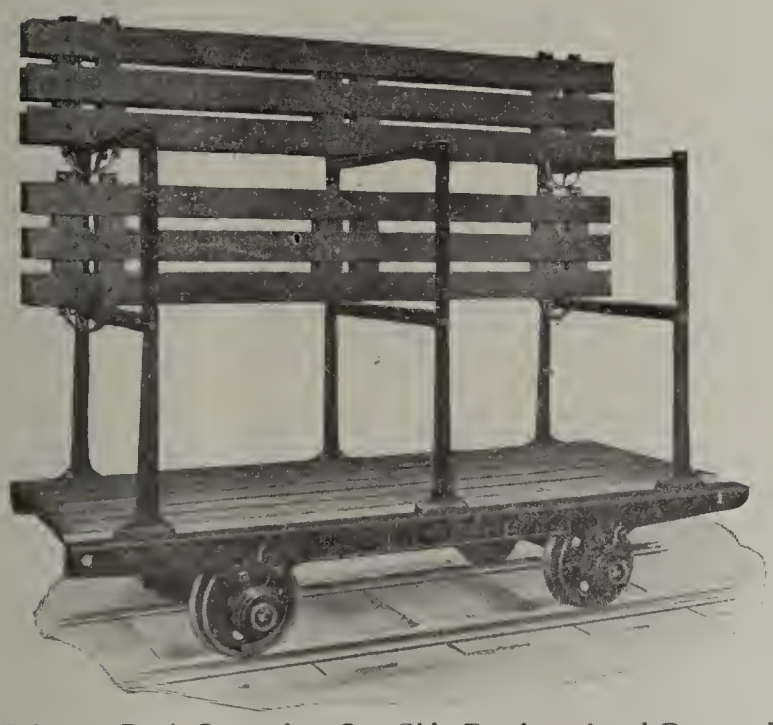
*Executive officer of the International Society of State and Municipal Building Commissioners and Inspectors, Washington, D. C.

to get the next best thing by having the fire limits, the area of first-class buildings, take in just as much territory as possible.

It is most desirable that there be uniformity in our building regulations. Note the troubles and complications that arise from having a different divorce law, for example, in every state. So with building, similarity, uniformity of regulations would be a Godsend. Therefore, I most urgently advise all building departments to use the Underwriters' Code as a model whenever new regulations or amendments are in order, use their definitions, terms, standards. Indeed, it would be infinitely better if all our cities would adopt that code as a whole, making only such changes as local conditions necessitate, rather than to feel obliged to get a brand new one in each case, and as often as not devised, not by the building department, but by a commission, composed of men perhaps acquainted with some phase or other of building, but lacking sadly in experience and expert knowledge of the whole problem and probably never having had a thing to do with building requirements.—From The American Contractor.

THE JOHNSON PATENT NON-DETACHABLE AND FOLDING CAR DECK

One of the latest and most important labor-saving devices which can be used on a brick yard or tile yard, is the Johnson patent non-detachable and folding deck for dryer cars, which has been patented by Charles H. Johnson, 1824 Greenleaf Street, Chicago. He has been a brick manufacturer for many years and at the present time is engaged as Superintendent of one of the most successful and most economically run yards in Cook County.



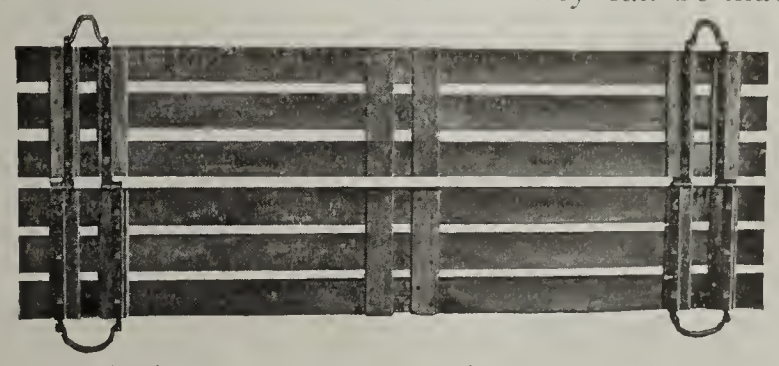
The Johnson Deck Opened to One Side Ready to Load Bottom Deck

The Johnson patent folding deck is adapted for and can be placed upon any style of dryer car now upon the market. They are so constructed that they are at all times in position and can be folded at either side or center at will. The decks cannot be removed from the cars so that employes cannot make gates, fences, etc., out of them when not in use. They are always just where they are wanted. The first cost is somewhat more than the regular or ordinary deck that is generally furnished with cars but before the year is out they cost considerable less as there is no repairing and charges for maintenance.

In loading the cars the Johnson deck is folded on the opposite side, as is shown in the first illustration. After the first deck is loaded all that is necessary is for the employe to pull the next deck toward him and the deck falls into position, always in the same place, no arranging same on account of being too far to the front or back or bruising of fingers or head or breaking of decks. After the deck is filled the third deck is operated in the same manner. The double deck car is usually used for bricks, while the triple deck is used for tile and all kinds of hollow ware.

In setting brick or tile in permanent kilns the Johnson decks are double the value of the ordinary deck as the deck can be raised in the center and the setters can unload the cars from both sides or with two gangs without the removal of the deck from the car.

The second illustration shows the underside of a deck. You will notice that it is hinged in the center and is so constructed that it cannot very well wear out and it is not possible to be taken from the car. They can be made of

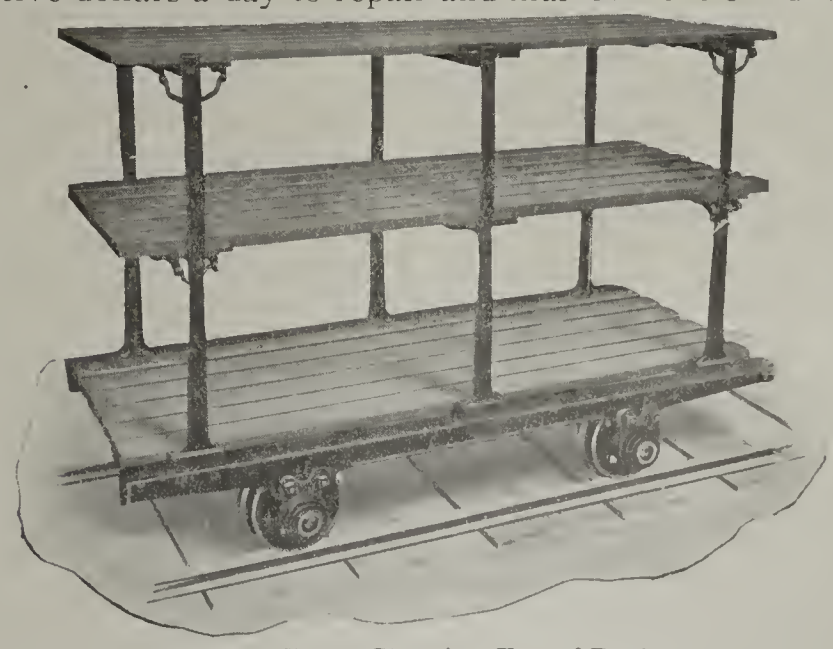


The Under Side of a Johnson Deck Showing the Mechanism

wood, steel or galvanized iron, as desired, in any style, from six to nine slats, according to the size of the car, and the mechanism can be made of malleable iron or drop forgings.

By looking at the illustrations any practical man can permanent attachment to any car, but to be fully appreciated they have to be used. They should by ordinary care pay for their cost in one season. By using good material these decks should last for years without a dollar of repairs.

The National Brick Company of Chicago, have three large yards and have 800 Johnson deck cars in each of them, which they have been using for eighteen months and during this time they have been used without a repair expense; before installing them it cost the company twelve dollars a day to repair and maintain the old decks.



Johnson Decks Showing Top of Decks

Mr. B. F. Weber, the president of the National Brick Co. says: "That the Johnson decks have been in use by their company nearly two years with very satisfactory results, the expense for repairs being nothing, that they are a great convenience to the men handling them and we consider the deck a labor saving device."

One can purchase the Johnson decks, or the irons for them so one can make the decks at home, or yard rights are for sale. If interested in them write direct to Charles H. Johnson, 1924 Greenleaf Street, Chicago, Illinois.

EMPLOYERS' LIABILITY INSURANCE IN BRICK YARDS.*

By F. E. Delaney, Resident Manager, Fidelity & Casualty Co., Milwaukee, Wis.

Perhaps no subject of recent times has created a more widespread interest than Employers' Liability Insurance. In a paper of this kind it will be impossible to present the many varied phases of this question, the legislation it has given rise to and the good and evil it has been responsible for. In the brief time allotted to me I shall confine myself to a general discussion of this question without making any attempt to go into details. No business man of the present time can doubt the advisability of carrying insurance. It has become a necessity. With the ever increasing hazard incidental to every business, where one unavoidable accident may mean the loss of thousands of dollars and where one large verdict may mean the wrecking of some small manufacturing company, the need of liability insurance is unquestioned. The protection against legal liability to employees in the event of accident is popularly denominated Employers' Liability Insurance. The employer very naturally wishes to relieve himself of the responsibility and this desire gave birth to a branch of insurance seeking to protect the employer from the liability imposed by law.

I may with frankness admit that this branch of insurance has not accomplished all we had hoped for. Where an employee has knowledge of the fact that his employer carries liability insurance, he often mistakes this for workmen's benefit insurance and when injured files a claim for his loss of time, doctor's bill, etc., and when payment is not forthcoming, because of non-liability, he becomes disgruntled, is likely to go to an attorney handling such cases upon a contingent fee, and as a result the employer although not damaged in money, because of the fact that the insuring company indemnifies him against loss, is nevertheless put to much annoyance by reason of such trusted employee meets with an accident and his employer feels morally, although not legally, responsible for his condition and wants to assist him.

The employer often urges the insurance company to stand the loss, while on the other hand the liability company looks at the legal side of the question and, there being no legal liability imposed by law, very properly refuses to pay the claim, preferring to defend in the event of litigation.

The employer looks at the question from a humane standpoint; the insurance company from a business and legal standpoint. I might go on and cite many illustrations of the good and evil incidental to this branch of insurance, but after all is said and done, we must look at this question from the humane standpoint and in the interest of both employer and employee. Some means must be provided to protect both alike from loss from accidents incidental to the operation of a modern business in this work-a-day twentieth century. I am not a lawyer and do not profess to understand the legal principles upon which this liability imposed by law is founded, but from my own observation and study of the question, it seems to me that we are working upon the wrong system. This liability imposed by law is based upon a breach of duty—in other words, negligence. If the employer would escape liability he must do certain things that he may not be at fault. He must provide his employees with a reasonably safe place to work; with reasonably safe appliances with which to work; and must exercise ordinary care in choosing fellow workmen for his employees. In the doing of all of these things he must, as I say, exercise ordinary care. He must promulgate rules, make repairs and inspections, and he must use reasonable care to warn his employees of danger. If the master has breached his duty in any of these particulars, he is guilty of negligence and is liable to his employee in damages. Statistics show that 15 to 20 per cent. of the accidents in manufacturing plants are due to the fault of the employer. The burden, however, is upon the employee to prove a breach of duty and if it appears that the employee has not done what a reasonable prudent man would have done under the circumstances, then the law says that he has failed to exercise ordinary care and no recovery can be had. Slight negligence will defeat his recovery. Statistics again show that about 20 to 25 per cent. of the accidents are due to the fault of the employee. Who then is responsible for the 55 per cent. of the accidents not thus accounted for? This 55 per cent. cannot be attributed to the employer or employee, but are classed as the necessary risks incidental to the conduct of the business; and these are the risks which the law says are assumed by the employee as being incident to the business and for which no recovery in damages can be had. In other words, about 80 per cent of the entire risk is placed upon the employee and about 20 upon the employer. This is not the fault of Employers' Liability Insurance companies, but is the fault of the law, and the system under which we are working. Why should the man who can least afford it be obliged to stand the greater burden? It seems unjust and any man who has good red blood running in his veins will agree with me that if this "brotherhood of man" means for anything, it is high time that something should be done to remedy this evil. We have outgrown this law of negligence. We have not kept apace with the times and we seem to have forgotten that conditions are different now than they were when these principles laid down in the law of negligence were logical and just.

With the complicated machinery now in use, the high speed instrumentalities and the ever-increasing demands upon employer and employee, something must be done to alleviate the present situation. It is true that many of our legislatures have attempted to equalize the burden by placing greater restrictions upon the master and as a result we see our child labor laws, our abolition of the fellow-servant rule in some of our states, our factory acts, our laws compelling the employer to guard certain instrumentalities, our laws abolishing the defense of the assumption of risk, where the statute has been violated, and many other well-meaning laws, which I will not mention. But even in spite of this legislation we must still come to the conclusion that the system is wrong and something ought to be done to remedy it. The ever recurring question is presented when this subject is up for discussion—who ought to bear the burden? There can be but one answer to the question. In the interest of humanity and common decency and justice, this burden ought to be borne by the general public. We reap directly and indirectly the benefits of both labor and capital; the public demands efficient labor and efficient labor can be acquired only through capital invested. Labor and capital go hand in hand, and the benefits and enjoyments which they confer are reaped by the general public. I am not enough of a lawyer to point out to you clearly how this can be accomplished; the idea which I contend for has been worked in other countries, a system has been adopted in England and if you will pardon a quotation, I will read a short extract from a speech of Prof. Lorenz bearing upon this subject.

"England is of practical interest to us, because our institutions were derived to a large extent from England. Our common laws is, of course, practically the common law of England, and the course of development which England went through was very similar to the course of

*Read at the last Meeting of the Wisconsin Clay Manufacturers Association, held at Milwaukee.

development which we find now in this country; that is, the original common law was modified from time to time by statutes which sought to impose upon the employer these duties and always, however, by retaining the idea that in some way or other employer was to be punished by a damage suit; it not having occurred to the legislators sufficiently that, after all, there was no real ground of antagonism here. It was not at all a class question; it was simply a question of adjusting the expenditures to which employers were put anyhow, in a more rational manner. Consequently in 1897 they took a step away from the old law of negligence and simply said: The employer is to pay a certain expense; we will make that definite. We will put into the law that every time an accident happens the employer shall, without any lawsuit, regardless of the negligence of the employee—for it is difficult to determine where negligence lies—the employer shall pay a definite sum specified in the law, moderate in amount. The employer, of course, could then go to the insurance company and ask them to protect him against this liability; so that he knows definitely what his expense is going to be; and since the law limits the damages to a reasonable amount the expense is not a heavy burden.

Systems Tried in England.

The employers of England have not complained particularly about the burden of this system. They simply pointed out that it is desirable to have it definite in all respects. England adopted that method in 1897. The scale of payments at that time was that the employee should receive one-half of his wages during incapacity, after the second week; they paying nothing the first two weeks. Or in case of death he should receive three times his annual earnings, the sum being limited to $1,500 practically. The employee according to this scheme was still permitted, if he choose, to bring a damage suit, but as a practical matter of fact to a very large extent they have chosen to accept the more definite compensation established by law, and the employer pays no attention to these various kinds of liability, because insurance company takes care of that. His policy reads that in consideration of the premium the insurance company will hold the employer free from damages, whether a suit be brought against him under the "Fatal Accidents Act" of 1846, or the Employers' Liability of 1880, or the common law, or under the "Compensation Act," which are all covered by a single policy, and he has his definite expense before him for it. That, you see, may be called a system of compulsory liability, with the option of insurance on the part of the employer.

Systems in Other Countries.

France has a similar system; so has Italy. Germany has a somewhat different system. Germany also has a system which is obligatory upon the employer, but it is more in the form of insurance. The employer is not left entirely alone to say how he will insure himself, as in England; but the government has said that every employer in a dangerous industry shall join an association of employers. They shall get together and make arrangements for collecting the premiums, which are graded according to the risks of the business, and according to the amount of wages paid; and then this sum is to be distributed through the postoffice, according to the scale of benefits which is specified by law. In Germany they pay as much as two-thirds of the wages if incapacity is complete, or they may pay to the widow a pension instead of a lump sum. That, by the way, is one feature which is of special interest, I think, to the people of the state of Wisconsin, for one of the evils which lawyers have pointed out a great many times is that when they secure damages for a workingman the lump sum which they secure is often of not very great benefit because the workingman hasn't the business experience to handle a large sum of money. If you organize a system of industrial insurance it would be desirable to include in it some method of paying an income—which would not increase the cost, because the actuaries figure that out as well as the cost of a lump sum—an income for a period of time instead of one payment at the beginning.

Whether such a system as has been adopted in these countries would be held constitutional under our system of government is a question for the lawyers and not for the insurance men. It seems to me, however, that some system could be and ought to be devised to take the place of our present antiquated system. Many of our states are interested in this question and have taken active steps for the purpose of promoting legislation along the lines adopted in foreign countries. Connecticut appointed a committee in the year 1907 to investigate and report concerning legislation to regulate the liability of employers. This committee has been continued in office and is at the present time engaged in drafting a bill to cover this question of compensation to employees.

In 1907 Illinois attempted to pass an act to facilitate the insurance of employees against the consequences of accidents resulting in personal injury or death and to permit agreements between employers and employees with reference to said accidents.

In Wisconsin at the present time I am informed that a bill is to be introduced in the legislature looking towards the appointment of a commission for the purpose of giving a careful study to this question with a view to drafting a proper bill. I am also informed that the workingmen of the city, through Mr. Weber, have drafted a bill similar to that of the Englishmen's Compensation Act and hope to have same introduced at this present session of the legislature.

Until something can be done along these lines it seems to me that the employer ought to carry workmen's collective accident insurance as well as liability insurance.

I thank you for your attention and for the honor you have conferred upon me in permitting me to read this paper before your association.

IOWA BRICK & TILE ASSOCIATION PROGRAM AT DES MOINES, JAN. 12, 13, 1910

1. Iowa Freight Rates on Clay Products.
2. How to Promote the Building of Clay Fireproofed Dwellings.
3. The Greatness of Iowa's Drainage Field.
4. Some Practical Experience in Drying Brick and Tile.
5. Resources of and Future Possibilities of the Iowa Clay Products Market.
6. Organization of Factory Production. The Economy Effected in Confining Plant to One Product.
7. Does Association offer any Benefits in the Establishment of a Purchasing Agency?
8. Recent Tests of Clay Products. Iowa State University.
9. Progress in Burning Clay Products.
10. Some of the Difficulties Met With in a Medium Sized Plant and How They are Overcome.
11. Determination of Cost of Clay Products of Different Sizes and Weights and its Importance in the Regulation of Selling Prices.
12. Questions—Members are invited to correspond with the Secretary, enclosing questions which they would like to have discussed. It will be arranged to have same answered, at the convention, by competent men.

KANSAS GAS BELT BRICKMAKERS MEET

The brickmakers of the Kansas gas belt met once more at the Carl-Leon hotel last evening for another conference on the brick situation. The factories of the region were pretty well represented. These meetings are held about every two or three months, as occasion seems to demand. They are of a double nature, social and business. The representatives of the different factories get together and talk over matters of interest in their business. In this way all the factories keep in touch with what is going on over the brick producing field.

One of the men in last night's conference, caught in a garrulous and unsuspecting mood by a calculating reporter, vouchsafed a little information along reminiscent and comparative lines that throws quite a light on the brick situation in the Kansas gas belt today. According to the unsuspecting brick man who told the tale over a good cigar and in a friendly mood, the present situation is something as follows:

"At one time there were thirty-nine brick plants in the Kansas gas belt; now there are fourteen. The reason? Cheap gas? Now that sounds foolish to the average person who holds to the idea that cheap gas means cheaper production and a correspondingly higher profit to the brick makers. That's what many of the brickmakers thought—at first. Because of this reason they overflowed into this field with the precipitancy of a small sized avalanche and began to build plants everywhere they found enough shale to make mud pies out of, without first indulging in a little, quite necessary bore drilling, whereby they might have found how much shale they were tackling and the quality of it. Then when the real competition between plants began, it was a matter of a very few car loads to some of these manufacturers—when they woke up. That is but one reason why so many plants have gone broke.

"So many thought that the cheap gas would allow all the manufacturers to make enough money to paper the garage walls with golden eagles; they failed to bank on human nature and see that competition must inevitably come, no matter what the cost of production.

"When the grind really did come, and it was not slow in arriving, these over-optimistic ones found that they were unprepared to make a winning fight against the men who had foreseen the competitive pinch and who had planned their actions to that end. Cheap gas brought nothing to the brick maker; he merely scraped that much off the price of his output, however, unwilling the people may be to believe it, they got the benefit of cheap gas while the war of the producer went on at just a few cents over the cost of production. It was merely another case of the 'survival of the fittest' and the fourteen plants that remain in the Kansas gas belt today were those whose owners had 'looked ahead.'

"Everybody used to think that you could make brick out of any Kansas shale; so you can—common brick. But people who subscribe brick factory stock are not always discriminating. It was this human characteristic which caused Adrian, Michigan parties to put up the funds with which the Yoke plant at Coffeyville was launched. It is said that, when Mr. Yoke was promoting this plant, he claimed to have orders for fifty million brick on his books; but when the plant was built it was operated at a loss for some time and then the stock holders put in more money; over a hundred thousand dollars being sunk in all.

"A great many outside investors have put money into Kansas brick plants even Canada has been a contribute in the plant at Leroy, Kansas.

"One peculiar fact about the Kansas gas belt plants is this: Nearly every one of them was built with the idea in mind of making vitrified paving brick. These dreams were not realized and today there are but three concerns in Kansas putting out a product that will stand the test of a standard paving brick. Hundreds of thousands of dollars have been put into expensive kiln and manufacturing materials in the Kansas gas belt, only to find, after it is too late, that they are incapable of making a standard paver.

"A number of plants are now using oil for fuel; the gas has played out in their vicinity and they must resort to something more expensive with which to manufacture their brick. This will, of course, make their product higher in price. It will also curtail sales, as the brick cannot be shipped long distances and then go into competition with factories they find at the end of the route."
—Independent Reporter, Nov. 11, 1909.

THE AMERICAN PULVERIZER COMPANY

The American Pulverizer Company of St. Louis, Mo., has fulfilled its promises in every particular and is proceeding along lines of conservatism, and in their American Ring-Hammer Pulverizer have a machine so full of rugged merits that recognition on the part of the public has extended to such a successful degree that the company has found itself compelled to broaden its plans and increase its manufacturing facilities.

A testing plant, equipped with a 100-h.p. engine and full size pulverizers, has been erected adjoining their manufacturing plant, for the purpose of pulverizing any materials sent the company by any prospective purchaser readily see their advantages. They make a neat and as a test of the merits of the American Pulverizer, same free of cost.

The company manufacture a Revolving Piano-Wire Screen that is attracting a great deal of attention. This screen is unlike any other on the market and has proven a great success. Its cylindrical portions, combined with its extended length, give it excessive screening surface, hence excessive screening capacity. It is equally efficient in shale screening or stone screening.

Another feature of the company's products is looming into prominence—this is the American Air Separator. The air separator is made exclusively to connect with the American Ring-Hammer Pulverizer, when it is desired to pulverize resistible or refractory materials to impalpable powder, even to 100% through a 200-mesh screen.

A test was recently made in pulverizing whole bricks to 200-mesh fine, in one operation, in the presence of a large party, and was pronounced a feat without comparison, either as to kind and size of material, tonnage per hour and screen mesh fineness.

The company is composed of substantial St. Louis business men—men rated high in their several vocations and given to an order of dealing that merits the public's confidence.

Mr. Paul Griesedieck, president of the Griesedieck Malting Co., is president of the American Pulverizer Co.; Mr. E. H. Elzemeyer, a retired breweryman, is Treasurer; Mr. Fred Herkert of Herkert-Meisel Trunk Co., is Vice-President and Geo. C. Videtto is Secretary and General Manager.

Mr. Videtto is thoroughly familiar with the necessities of a brick plant, having been a brick manufacturer as well as portland cement manufacturer, hence broadly informed as to all makes of pulverizing machinery and their uses.

Mr. Videtto is a born Pennsylvanian, a college and law graduate and has traveled, in a business capacity, most of the countries of two hemispheres.

CLAY NOTES FROM THE EAST.

Brick making in the Eastern part of the country is about over, after one of the most successful seasons of a decade. Not only has the weather been exceptionally good all through the season, but the demand for brick of all grades has been well maintained and the quantity left at the close is comparatively light, when considered with reference to the supplies left over some previous years. And there is evidence that the coming season will be equally as good. This prediction will unquestionably be fulfilled about the big cities, but what will occur near and in the smaller towns it is impossible to say. Two weeks ago the price of common brick dropped to $5.50 per 1,000, but within the first ten days of November it advanced and is now $6.25 to $6.50 per 1,000, where it will remain until the close of the season. Practically all manufacturers and dealers make the same reports, the unusually active season and the best possible prospects for the beginning in the spring.

Hon. John B. Rose, head of the John B. Rose Company, of Roseton, N. Y., bought both the Bartlett yards at Roseton and Hudson, N. Y., last week at receivers' sale and will operate them in connection with the other Rose yards the coming season. Some doubt is expressed regarding their being run to their full capacity, but of course that will depend upon the condition of business at that time. The yards are understood to be in reasonably good condition, with fair equipment and opportunity for increasing the output if desired.

Most of the yards along the Hudson river have closed for the season after having an unusual run of business and a development which has far exceeded the expectations of makers. The absence of storms has enabled makers to turn out brick with a minimum of loss and in record time. When asked by the writer how many had been turned out along the Hudson this year a prominent factor in the business refused to undertake any estimate. He declared that only official figures from the various yards would make an estimate anywhere near approaching accuracy possible. He thought, however, that the output would exceed anything hitherto known in the history of the business along the river.

All the yards along the Raritan river in New Jersey have closed down for the season after making many millions more than ever before. These yards were somewhat disturbed by a strike early in the season, but after that was settled there was no further difficulty and the operations were continued without interruption from June until the close, the middle of November.

The Merhof Brick Company at Little Ferry, N. J., is closing its season with a record output, approximating over 20,000,000. The company has 125 arches yet to burn which will be finished before the works are finally closed. The quality of brick turned out by this firm is exceptionally good and Mr. Merhof, the head of the concern, told the writer that he could dispose of a good many more if he could make them. Demand is practically unlimited. The capacity for turning out good brick is limited.

An employe of this firm when talking with a representative of the Clay Record complained about the speed with which the manufacturers expect the employe to work now and declared that very many of the poor brick are due to the fact that they have to be handled too fast. He pointed out that they come from the machine much faster than the average employe can take them away and the result is many poor brick. He was not prepared to say that the percentage of loss is sufficient to take away whatever gain there is in the speed, but he intimated as much. This might be a profitable question for discussion in sections where the speed of handling has been increased until it is difficult for employes to keep up with the machine.

Gillies and Gardner of Hackensack, N. J., have made about 5,000,000 brick the past season and have had a good business throughout.

The Hackensack Brick Company has turned out something like 5,000,000 and has comparatively few left to carry over for spring. They talk of enlarging their works and uncovering more clay next spring.

The total output along the Hackensack river this season has been not far from 50,000,000, most of which have been sold and used. The output is nearly, if not quite a record, exceeding last year by 15,000,000. The writer does not recall a season when any more were sent out. All the Hackensack river brick makers are congratulating themselves upon the excellence of their season and the profitable sales they have made since the opening.

BANGOR BRICK COMPANY ENJOYS PROSPEROUS SEASON

The manufacture of brick in the yards of the Bangor (Maine) Brick Co., is closed, the last kiln of the season being burned. One million brick is the number in the last kiln and this amount will give the company 1,960,000 for the winter business.

The Bangor Brick Company has sold 3,250,000 brick since Jan. 1, 1909. This record of sales does not compare with the 5,000,000 of 1908 but considering the strength of the opposition the record is a most creditable one. The company sends its brick all over the State of Maine and has received innumerable orders from other States. The orders from out of the State had to be returned because the freight rates are too high to allow the brick manufacturers in Maine any profit in sending their product out of Maine. The price of brick remains the same as last year, $11 per thousand for face brick and $7 per thousand for the run of the kiln. The quality of the brick manufactured by the Bangor company allows it to get a little more money than many other manufacturers.

During the present summer the company has manufactured 3,250,000 brick, the same amount that it has sold, and in doing so has burned approximately 1700 cords of wood at a cost of about $3.50 per cord or $5,950 for the whole amount. The cost of wood is not the only item of expense necessary in the manufacture of brick. About 47 men have been employed throughout the summer and 12 horses have been worked every day. The pay roll of the company and the cost of keeping the company's stable is quite an expensive proceeding and coupled with the losses entailed by storm and bad weather it requires the best of management to make a brickyard a paying proposition.

In the matter of weather the Bangor company as well as all other companies has been extremely lucky this season. During the entire summer the company has lost only about 25,000 brick through the medium of rain and this record is a new one, the losses some years running up as high as 75,000.

The clay deposit around the yards of the Bangor Brick Company is sufficient to last about 15 years and on the basis that the old clay grounds may be tapped again in that time the company is planning on installing motors to operate the treads to take the place of horses.

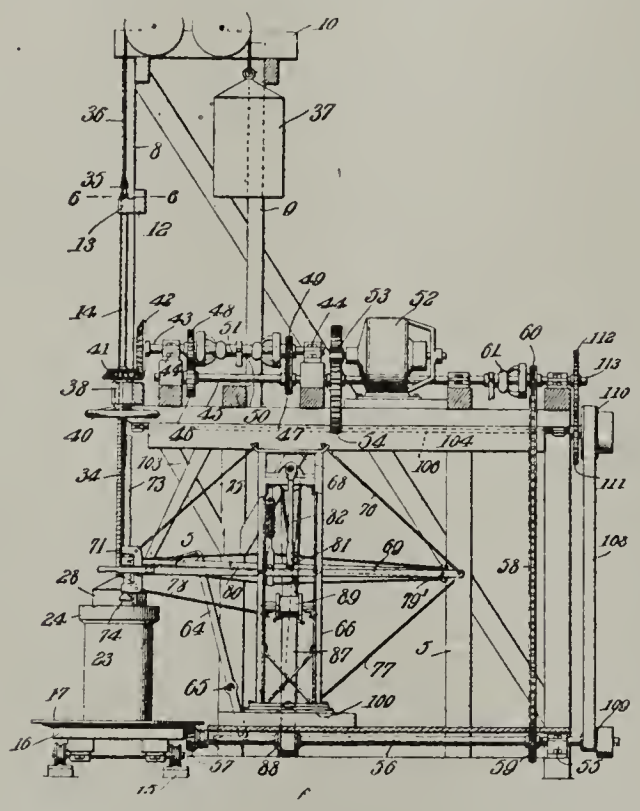
The output of the company this year is no criterion on which to base the capacity of the yards. About 6,000,000 brick can be manufactured on the grounds of the Bangor Brick Company, that is, if weather conditions are as favorable as this year.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

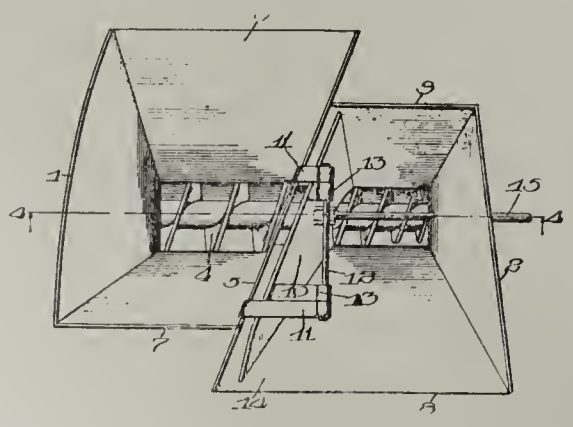
929,898. Glazed-Cement-Sewer-Pipe Machine. James Thomas, Tacoma, Wash. Filed Nov. 17, 1908. Serial No. 463,088.

In a machine of the class described, a mold-carrier, a mold mounted for rotation on the carrier, a core member movable to operative position within the mold, means for tamping the material in the mold as the latter is rotated means for rotating the mold and core in the same direction during one operation of the machine, and means for locking the core against rotation while the mold revolves at another stage of operation of the machine.



In a machine of the class described, a mold-carrier, a vertically movable core, a plurality of molds mounted for rotation on said carrier and movable successively to a position beneath the core, means for lowering the core within said molds, means for simultaneously rotating the core and the adjacent mold in the same direction during one operation of the machine, and means for locking the core against rotation while the mold revolves at another stage of operation of the machine.

930,573. Mixing-Machine. John A. Svenson, Pittsburg, Pa. Filed July 6, 1908. Serial No. 441,974.

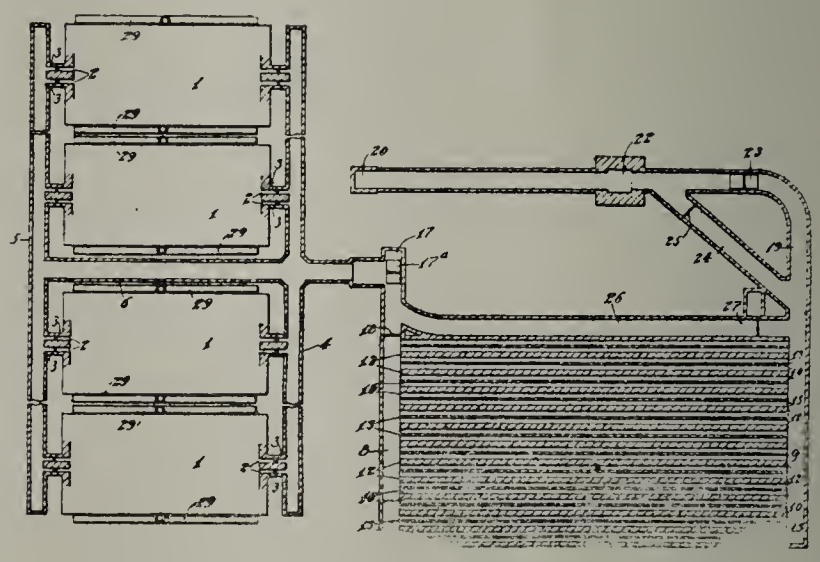


The combination of two flaring hoppers abutting side by side, the common wall of said hoppers extending at an angle other than a right angle with the length of the hoppers, when the hoppers are viewed in top plan.

The combination, with a conveyer, the capacity of which differs at different points in its length, of a hopper serving said conveyer, said hopper having a wall extending at an angle other than a right angle with the length of said conveyer, of a gate arranged to lie close to said wall and mounted to move longitudinally of said conveyer.

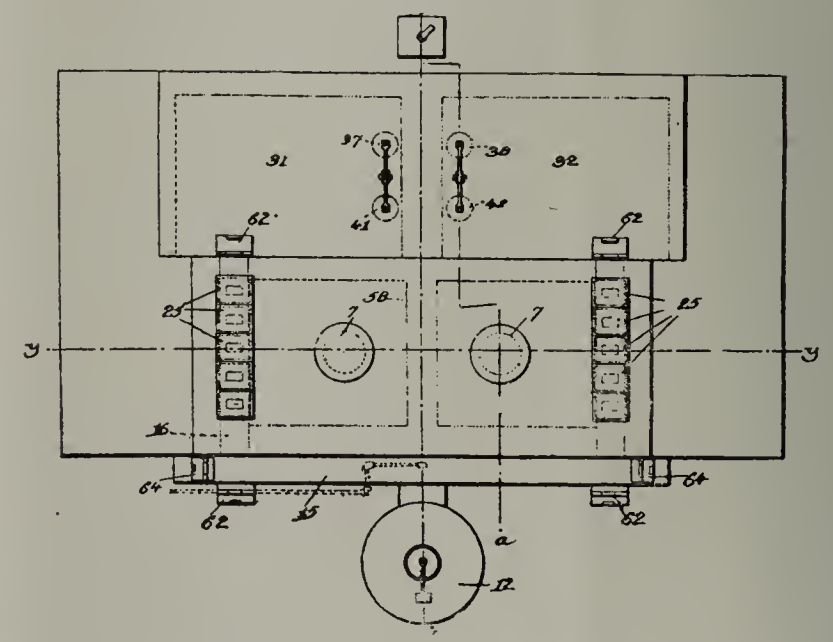
930,587. Drier. Thomas M. Wilson, Philadelphia, Pa. Filed Feb. 20, 1909. Serial No. 479,246.

In combination with a kiln, a drier comprising a plurality of elongated chambers, flues below the chambers, cross flues at the ends of the drier communicating with said flues below the drying chambers, means for directing the smoke and gases from the kiln to one of said cross flues, and from the other of said cross flues back to the kiln.



In combination with a battery of kilns, a drier comprising a series of elongated chambers, of longitudinal flues below the drier chambers, cross flues at the ends of the drier, connecting all of said flues, means for directing the smoke and gases from the kilns to one of said cross flues, and from the other of said cross flues back to the kiln, a fan or blower adapted to force the smoke and gases through said flues, and a stack communicating with said directing means.

930,506. Kiln. Arthur E. Truesdell, Pittsfield, Mass. Filed Aug. 9, 1905. Serial No. 273,413.



In a kiln, two separate kiln chambers communicating with each other, each chamber having an upper charging opening, and a lower discharging opening, means to normally close said openings, means to deliver air and gas to either kiln-chamber at will, and means to abstract from the waste products of combustion the heat therein, and return it to the kiln.

In a kiln, two separate kiln chambers arranged side by side, and having permanent communication with each other through their adjacent sides, a flue leading to each kiln chamber on the opposite side, an exhaust device, means to connect the exhaust device with either of said flues, and means to deliver air and gas to the other flue.

PACIFIC COAST NEWS ITEMS

Several rains of unusual severity for this season of the year have already fallen and the owners of many of the brick plants throughout the state are preparing to close down for the season. There is at the present quite a large stock of brick now on hand at the various yards, especially in the vicinity of San Francisco Bay, and in the best interests of the business operations from now on will be on a light scale. Prices are down at quite a low level again and already there is a disposition on the part of small operators to close out their stocks at whatever figures they can secure and close their plants for the winter. Winter building operations in San Francisco promise to be larger than are usually the case, especially in the line of brick buildings, and this encouraging prospect is viewed with satisfaction by the men in the brick business. The future of the brick business here is especially bright for it is to be noted that the craze for reenforced concrete buildings has largely passed, and a larger proportion of the buildings now being erected are of brick construction than has been the case at any time since the fire. The most disquieting feature of the business lies in the fact that there are at the present time more brick plants in operation close to the city than there can possibly be any need of. None of these are disposed to close their plants to help out the balance of the industry so that, in the line of common brick, the supply is apt to be ahead of the consumption for some time to come.

The Board of Public Works of San Francisco has issued a notice to property owners that all the temporary structures erected without permits in the days following the fire must be removed by next May. This will cause more building to be done and will, of course, be a material benefit to the brick industry. Several changes in the building laws are also being planned that will also be of benefit to the industry. Among these is a set of regulations designed to place restrictions upon the use of concrete, making the regulations regarding the quality of the same more stringent.

Gladding, McBean & Co. are at the present time, employing more men in the terra cotta department at the Lincoln, Cal., plant than ever before, which is indisputable evidence of unusual activity in structural lines in California. The demand for this company's products has been such that another mammoth kiln is to be built at once at Lincoln, the same to be a replica of the terra cotta kiln erected there last year, which was at that time, and still is for that matter, the largest in the state. Ground has been broken for this kiln which will be in operation in the spring. Most of the polychrome work for the new Columbia Theatre building in San Francisco, has already been shipped and considerable of it is now in position.

The brick plants in the southern part of the state have been very busy this season and have managed to secure better prices for their products than have their northern neighbors on account of a fewer number of plants in operation. The Los Angeles Pressed Brick Company, in addition to having supplied some large contracts in Los Angeles, has just completed the filling of an order totaling 500 cars of brick used by the Los Angeles-Pacific Electric Railway in facing its Hollywood tunnels. This material came from the Santa Monica plant of the brick company and was transported to the tunnels over the lines of the railroad company.

The Golden Gate Brick Company of San Francisco, which recently consolidated with the Stockton Fire & Enamel Brick Co., of Stockton, Cal., has just secured a contract very much sought for. This is for the brick to be furnished for the facing of the new Southern Pacific powerhouse at Fruitvale. The building is 228 feet in length by 138 feet wide and will be three stories in height. In the city of Stockton this concern has also secured some fair sized contracts and will furnish a buff enamel brick for facing the new Stitser block at San Joaquin and Weber Avenues and the same class article for the Mizio building on Market Street near Hunter.

The Pressed Brick & Supply Co. of Vallejo, Cal., has but a light stock of brick now on hand due to several large sales that have been made of late. One order from Oakland, called for a quarter of a million vitrified face brick and conditions are so promising that the plant will continue to be operated for some time.

The Pyrmont Brick Company of Lincoln is not manufacturing brick at the present time, but is making some heavy shipments of clay from its deposits. A spur track has been constructed to the property making possible the economic handling of material.

The new plant of the Simonds Brick Company at El Centro will be in operation shortly, probably before the end of the year. This plant will not only turn out brick, but will also manufacture tile for fireproofing and for irrigation. In Pasadena this concern is having considerable trouble with the landowners in the vicinity of the plant which claim that it is a nuisance but the brick company refuses to close and states that it will fight the proposition.

The announcement is made that M. A. Metzner, an experienced clay worker who has operated in the New Rochelle, N. Y., and Perth Amboy, N. J., districts has purchased an interest in the Western Tile Works located near Los Angeles.

In spite of the low price of brick in the local market the Pacific Manufacturing & Supply Co., of San Pedro, Cal., is shipping brick into this city, a small cargo having been received just a few days ago.

Heberling & Toothacre, the proprietors of the Pioneer Brick Company, operating a plant near Visalia, Cal., have found business so satisfactory in the San Joaquin valley town that the plant will not be closed until the rains make it necessary. Almost 5,000,000 brick have been made this season. New machinery was added recently and the daily output is now almost 50,000. The product is absorbed in Visalia, and nearby towns.

A brick plant to cost in the neighborhood of $45,000 is to be erected next spring near Nephi, Utah. A company is now being organized by C. F. Hoffman of that place and the necessary funds have been secured.

WEAVER COMPANY WILL MAKE ROOFING TILE

The Weaver Coal & Clay Co., Brazil, Ind., who have recently enlarged their plant, putting in modern machinery and adding new kilns, have found that they have an excellent shale for roofing tile. They have burned this into drain tile and find that it makes a beautiful dark cherry red.

They have practically concluded to put in roofing tile machinery and arrange for the manufacture of a very high grade roofing tile, expecting to start with the Spanish and inter-locking tile.

It is the opinion of outside experts that they have a most excellent shale for this purpose and it is their judgment that they are on the right track and will manufacture a strictly high grade article in keeping with their past reputation.

CLAY RECORD.

PUBLISHED SEMI-MONTHLY BY THE

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GEORGE H. HARTWELL, EDITOR

SUBSCRIPTIONS

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Vol. XXXV. NOVEMBER 15, 1909. No. 9

"I like to read American advertisements. They are themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

Don't let the badness of your neighbors worry you; they might do worse.

Good behavior may be rather old fashioned, but you never heard of it getting a man into trouble.

Smooth sailing does not bring out the stuff one is made of. It takes shadows to make sunlight appreciated.

Our idea of a hypocrite is a person who throws mud at a man while alive and puts flowers on his coffin when he is dead.

The good lawyer keeps you from fighting. Many lawyers, however, are grafters, and they advise fight, for they win whether you do or not.

The army that attacks the enemy in the enemy's country has the odds against it, as all wars have proven. Men fight best at home on their own vantage ground.

Establish a credit whether you need it or not. It is a good advertisement and a frequent help. Be reasonable in paying your bills but positively sure that you do so.

The average young man makes up his mind that at fifty or sixty years of age he will retire and take things easy for the rest of his life. The average young man makes a mistake, as it is far better to wear out than to rust out.

BRICK YARD LAW UNCONSTITUTIONAL

"Drastic, radical and extreme municipal law" is the term the supreme court in an opinion by Justice Bailey applied to the ordinance of Denver forbidding brick yards to operate within 1,200 feet of a residence or school house. The court holds the city's laws to be unconstitutional in deciding the case of Denver vs. Patrick Rogers in favor of Rogers. The opinion says that brickmaking is "one of the most necessary industries known to business life," and says that the Denver ordinance attempts "to arbitrarily drive it beyond the city limits."

Rogers is a brickmaker who was fined in police court for operating a brick yard near a residence. In the county court the judgment was reversed, and it is this judgment that the supreme court affirmed. The city provides for a fine against the operator of the prohibited brick yard and defines the yard as a nuisance.

SAYS CONTRACT IS IN RESTRAINT OF TRADE

The supreme court of Pennsylvania finished the argument list for the fall term.

One of the cases heard touches upon the Sherman anti-trust law and raises the question of the validity of a contract to refrain from business. The title of the suit is the Harbison-Walker Refractories Company vs. William A. Stanton, appellant. In 1902 all the manufacturers of silica brick and a majority of the manufacturers of clay fire brick were consolidated. The agreement provided that the owners and stockholders of the original companies were not to engage in the silica or clay fire brick trade in Pennsylvania, Kentucky, New Jersey, Maryland or Ohio for 15 years except with the consent or in the employment of the new company. Stanton, who had been president of the Basic Brick Company, went to the new concern and held various positions with it until 1908, when he was dismissed for alleged misconduct, which he denied. Stanton then engaged in business with another company and a suit was brought by the Harbison-Walker Company to enforce the contract to refrain from business.

The trial judge refused to enforce the contract except as it referred to Pennsylvania, on the ground that it interfered with the Sherman act, but the court in banc held the covenant valid so that it applied to manufacture but not to trade. His attorney argued that the works of the Basic Company having been dismantled by the new company, it could no longer hold Stanton to the agreement. Cases were cited to prove that the contract created a practical monopoly and was in violation of the Sherman act.

The attorneys for the Harbison-Walker Company denied that Stanton was dismissed and asserted that he resigned when asked to account for certain actions. They held that the contract was no broader than necessary to protect the purchaser in the enjoyment of the thing sold. They denied that the company is a monopoly or that it in any way unlawfully restrains trade.

FIRE! FIRE!! FIRE!!!

Fire destroyed the main building of the Pearl Clay Products Co. plant at Kushequa, Pa. It was partly covered by insurance and will be rebuilt at once.

The entire plant of the Southwestern Cement Plaster Co., located at Okeene, Okla., and the largest in Oklahoma, was destroyed by fire. The loss is $10,000. Insurance, $12,500. Plant will be rebuilt at once.

The Corwith (Ia.) Brick & Tile Works was destroyed by fire, causing a loss of $8,000, with only $1,500 insurance. The plant had just been shut down for the season and the fire was started by unknown marauders. It will be rebuilt as soon as possible.

PRICES TO RULE HIGHER FOR HUDSON RIVER BRICK

At a meeting of the Hudson River Brick Manufacturers' Association, at the Palatine Hotel, Newburgh, N. Y., the condition of the market for the year was canvassed, and it was announced that the price in cargo lots would be $6.00 to $6.25 per M., and that on the following Monday the quotation would read, $6.00 to $6.50. It was further decided to stand by those figures, which, it was said, were made compulsory by reason of the fact that labor conditions have been such this year as to leave a very small margin for the manufacturer. These, of course, are not the winter prices, further action being probable later. The transactions in New York last week were normal.

Most of the Hudson River brick companies have stopped manufacturing. Here and there a palette yard has some brick on rack, but they are the exception. More brick will begin to come in from now until the close of navigation if the new prices are sustained. There is little talk among the manufacturers of making extensive yard improvements this year, the disposition being to wait until a better idea may be had of what next year will bring forth. While a good year is generally looked for, conservative men do not expect a boom. They say, however, that they believe next year's business will be an improvement over this one. The opinion seems to be unanimous that better prices will rule.

PLAN FIRE BRICK PLANT FOR ELGIN

Deposits of silica have been found near Elgin, Oregon, and R. C. Plass is making extensive experiments to demonstrate the value of the clay for the manufacture of fire brick. If the results are as at present anticipated an extensive manufacturing plant will be established during the coming year. There is great confidence that the experiments will prove successful and arrangements are being made for a manufacturing industry that will call for the expenditure of $20,000.

Samples of these bricks were on exhibition at the recent fair and also at the local display of products at Elgin. Brick compressed from the silica are much lighter in weight than those which are made from clay, but the resistance against the effects of heat are the main merit claimed.

ACCIDENTS, DAMAGES AND LOSSES

Dan Ellis, employed by the Poston Brick Co. at Crawfordsville, Ind., lost his eye by the breaking of a wire on the brick cutter.

The men were seriously injured at the plant of the Collinsville (Okla.) Brick Works by a kiln being blown and burying them in the debris.

Another man was ground to pieces in the Pug mill of the Independent Brick Co., at Trenton, N. J. The victim this time was Dominick Jearecello.

Andrew Flood, an employe of the Charles Young Brick Co., Philadelphia, Pa., was instantly killed by a freight train while backing his team into a barn.

Jack Watts, a former well known boxer at Cohoes, was shot and killed while a "looker on" of a scrap between two other employes of the Champlain Brick Co., at Mechanicsville, N. Y.

Edward Rowley, an employe of the old Armstrong Brick yard at Roseton, N. Y., was instantly killed by electricity while drilling in the clay. The foreman of the yard was also injured.

The Stephens Brick Co., Portage La Prairie, Manitoba, has setled with an employe by the name of Hyndman for the loss of an arm while at work in the plant. The usury being $3,000 including all court costs.

John Dalton has filed suit for $5,000 damages against George Roller, Canton, Ill., for injuries sustained in his yards some months ago. Mr. Roller is insured against accident so the loss will fall upon the company.

Geo. W. Bostwick, manager of the United States Brick Co. plant at Michigan City, Ind., was arrested by the State factory inspector charging that he had failed to clean the boilers of the plant and had failed to properly guard the wheels and cogs in compliance with the new law of the State.

TESTS CONCRETE TILE AND FINDS IT IS NOT UP TO THE STANDARD

An examination and test of the cement tile being used in drainage district No. 32, has resulted rather discouragingly to the manufacturers of that product. The board of supervisors had one of the professors of Ames College out in the district last week and according to his test the tile at Lone Rock, Iowa, came far short of the required standard. The test was made by placing the tile in a bed of sand and fitting a frame over the top of the tile and filling it with sand so as to have an even pressure, and then placing weights on top. Some of the 20-inch tile, manufactured by the Ceylon Tile Company and being used in district No. 32, broke under a pressure of 1050 pounds. It is claimed that a tile of this size should hold up a weight of from 3000 to 4000 pounds. A 14-inch tile made by the same company went down under a 1900 pound pressure, which was considered very good. A 10-inch tile made by the Bancroft Tile Company, broke under a pressure of 1400 pounds.

What will be the result of this examination is hard to conjecture. The report is prevalent that in district 32 half a mile or more of the tile has been laid; the contractor, Waldmer Jensen, having gone on with the work after the engineer in charge had pronounced the tile O. K. and now the failure of the tile to stand the test has placed matters in an embarrassing situation in that district.

COMPANY DOUBLES CAPITAL STOCK AND WILL IMPROVE PLANT

The stockholders of the Crawfordsville, Ind., Shale Brick Company held a meeting at the First National bank and voted to increase the capital stock from $25,000 to $50,000, thus doubling it. This extra $25,000 is to be used a part of it to improve the plant and the rest of it is to be used as a working capital during the winter, when business is not brisk. For one thing, the present side track will be extended four times its present length, so that six or eight cars can be set on it at one time, thus enabling the company to have cars with coal for fuel and cars for loading brick in. Two new tunnels will be put in in connection with the dryers. These will be used for making a beautiful glazed brick for finishing purposes. These bricks are similar to the Oriental brick. The present stockholders will have first chance at the new issue of stock, and it is understood that one of them says he will take all that is left after the others get their pro rata allotments.

The company took charge of the brick plant about a year ago and had to do considerable improving besides putting in much new machinery. Not much real work was done until within the past four months. In all eighty-seven carloads of brick have been sold. October was the banner month, the output that month being 1,600,000 brick. About thirty-five men are given employment at the factory and the increase of business is very gratifying to the stockholders who voted to declare a dividend of 10 per cent subject to the approval of the directors. The annual meeting of stockholders will be held Friday, December 3. The company is sending most of its product to Detroit and Chicago.

GROUND TO PIECES IN PUG MILL

Another man met a horrible death Nov. 3rd, by being ground to pieces in a pug mill at the plant of the Independent Brick Company, Trenton, N. J. About a month ago a foreigner employed at the plant met the same fate when he fell into one of the machines and was hacked to pieces by the many knives.

The last victim was Dominick Jearcello, an Italian, who lived somewhere in the Chambersburg district, near the Roebling plant.

In one of the buildings at the plant are clay hoppers, better known as "pug mill machines." The machines are sunk into the ground and are operated by sets of revolving knives.

The men have to stand close to the machines and shovel chunks of raw clay into them. The clay is ground and mixed and finally carried to brick-pressing machines.

Jearcello was operating one of the hoppers. He stood on a pile of clay that had accumulated near the machine. While working he lost his balance and fell into the deadly grinding machine.

A few minutes later a fellow-workman happened to pass the hopper and he saw the man's body being ground to many pieces.

THE MINNESOTA BRICK & TILE COMPANY STARTS ON ITS $200,000 PLANT

We gave the news some time ago of the projected location of an immense brick and tile plant in Austin, Minn., backed by outside parties. The plans are now completed and work begun on excavations for the buildings and kilns. The new company is composed mainly of Mason City parties who are owners of one of the biggest plants there. They have bought nearly 100 acres of land east of the Milwaukee tracks and north of Brownsdale Avenue, including the Ed Barr twenty acres where Barr made brick for years and the Kearns sixty acres adjoining on the east. This is the old F. A. Richardson property. The main building, 250x250 feet will be located near the junction of the Milwaukee and the Great Western tracks and both roads will run spurs to accommodate the plant's needs. There will be no unnecessary drayage or hauling of products in and out. The city of Austin gives free water and up to 60 horse power free for three years with the privilege of two years extension if the plant proves what is promised.

The value of the Austin clays has been well known for years. When the old Austin company made pressed brick they furnished for the U. S. building at LaCrosse and other prominent buildings. The Mason City parties who have bought here have been experimenting for months with the clay and find it superior in every way. It is clear of lime stone and has other advantages which are well appreciated.

The new plant will be strictly up-to-date. Twelve kilns will have a capacity of thirty thousand 6-inch tile each, making a total possible output of about six million 6-inch tile annually. Work on the plant will be rushed during the winter. The main building will be of brick. The plant will be in full running order next June.

The new company has plenty of capital and will put in $200,000 in the Austin manufactory. They are thoroughly experienced and successful in the line of any clay handling. The writer recently visited the large plants in Mason City and understands what the coming of this new industry and the employment of a large force of men means to Austin. It is the best thing that has come to us for many a day and the Austin Commercial club and those who have cooperated with them are deserving of great credit for their successful efforts in having it established here.

ALABAMA RATE QUESTION UP TO COMMISSION

At a meeting of the Alabama railroad commission the transportation companies of the State will be asked to show cause why the rates on pressed and paving brick should not be the same as on common and fire brick. Under the Alabama rates schedules only common and fire are mentioned hence the rail lines did not lower the old charges on the other two kinds. General complaint having arisen an effort will be made, and no doubt come out with success, to have the rates the same, as the entire lot would seem to be adjustable along that line.

ASSESSMENT HAS BEEN DECLARED ON STOCK OF THE CHANUTE CEMENT & CLAY PRODUCTS COMPANY

The Chanute, Kansas, Cement & Clay Products Company, which was recently forced into bankruptcy here, and over which Byron White was temporary receiver for some time, may be reorganized and completed according to the original plans, if efforts along that line which are now under way are successful. Of the proposed reorganization the Chanute Tribune says:

"George A. Douglass returned this afternoon to Battle Creek, Mich., after being here for some time assisting in the movement which is on foot for the organization of a company composed of bondholders of the defunct Chanute Cement & Clay Products Company to complete the cement plant which the company started to build west of this city and place it in operation.

"About 150 men have joined in the movement," said Mr. Douglass, who seemed well pleased with the progress which has been made.

"The story that the dredger which the Chanute company used at the Bronson, Mich., plant, sank into the swamp after it had been at work but a short time and has not been recovered, is without fact. The Bronson plant is all right. I believe it could be made to pay the same as other plants of the kind in Michigan. It is all a matter of management."

The Bronson plant is part of the assets of the company. The reorganization plan being wrought out provides for the payment by each bondholder of 20 per cent of the amount which he has already invested for raising a fund with which to bid in the property when it is sold under the order of the court to satisy the claims which have been filed against it.

Persons who pay this assessment will be given stock in the new company which is to be formed.

ALABAMA COMPANY INCREASES CAPITAL AND WILL MAKE FIRE-PROOFING

The board of directors of the Alabama Fire Brick Manufacturing Company of Birmingham held a special meeting for the purpose of formulating the plans of the plant, the erection of which they will begin on their properties at Riverside, Ala., within the next 30 days.

After considering the proposed bond isuue of $30,000, which was voted upon at the last meeting, it was found that the company would have sufficient funds derived from the sale of its 7 per cent cumulative preferred stock, which carried 50 per cent of the common stock with the preferred, to build and operate upon successfully, as the preferred was being sold very rapidly.

This company will manufacture fire brick, fire-proofing, repressed face buff brick, conduits and flue linings. This will be the second plant south of the Ohio that engages in the manufacture of fire-proofing and there is apparently no reason why it should not be one of the best dividend-paying plants in the south.

The capitalization of this company was increased from the present capitalization of $50,000 to $200,000.

AUTO KILLS MILLIONAIRE BRICK MANUFACTURER'S WIFE IN VIEW OF HUNDREDS

Mrs. Frank Cazanova Jones, wife of the millionaire brick manufacturer, was killed almost instantly when struck down, just north of the Waldorf-Astoria, N. Y., on the night of Nov. 12, by a motor bus. The accident was seen by scores of society folk and by hundred of shoppers.

It may be Mrs. Jones was frightened to death, or that her skull was fractured, or she sustained a concussion of the brain. At all events, there was only one mark upon her body, a bad briuse of the right hand, which the bus crushed. She was not run over, so could not have sustained internal injuries.

Mrs. Jones left a department store opposite the Waldorf and started across the street. When almost upon the other curbing the bus came along. She stepped first ahead, then back, and the radiator of the bus knocked her down. The machine came to a stop, one of its forward wheels resting on her hand. She screamed in agony.

A policeman galloped up and ordered the chauffeur to back off the hand. He did so, and then helped carry the victim into a store.

As soon as laid upon the floor Mrs. Jones became unconscious. Twenty or thirty other women alighted from motors and carriages and administered to her.

But before the arrival of an ambulance she died. Her body and the chauffeur-prisoner were sent in the same wagon to the tenderloin police station. It was not until the contents of her handbag were examined that her identity was discovered.

Her husband was immediately notified and with his daughter came to the station in a motor. As he looked upon the body he fainted.

Mrs. Jones was fifty years old and the wife of Frank Casanove Jones, president of the W. A. Underhill Brick Company, of No. 103 Park Avenue. She was the daughter of the late George B. Lamar, formerly president of the Bank of the Republic, and was well known socially.

Mrs. Jones was born in Atlanta, Ga., and received her education at Wellesley College. She was married in 1883 at the home of H. F. Durand, formerly president of Wellesley College, and leaves a son, Frank C. Jones, Jr., besides her husband and two daughters.

UNIVERSITY OF KANSAS TO MAKE POTTERY

The University of Kansas is to enter the market as a manufacturer, according to an announcement made by Professor Griffith of the department of painting and design at Lawrence, Kansas. Fine pottery is to be the product, and as soon as possible Kansas clays will be used in the making. Miss Maria Benson, the instructor for the new department, has arrived from the famous Newcomb potteries of Tulane University at New Orleans, and begins work immediately. Thirty-four students are already enrolled for the work.

The American Clay Machinery Co., Bucyrus, O., has recently issued a catalogue in the French language, 175 pages, described a varied assortment of clay working machines manufactured by the company.

TERRA COTTA INTERESTS RECEIVE IMPORTANT ADDITION IN THE FEDERAL COMPANY

The remarkable growth in the utilization of terra cotta in our buildings and other purposes for which it has been successfully utilized is naturally greatly increasing the importance of this industry.

In view of this growing importance of terra cotta, the organization of a new company to engage in this industry is news of importance, particularly when it is in the hands of men of experience and success in this branch of industry, who, by reason of their past experience will undoubtedly place their new enterprise in the front rank of its field.

The Federal Terra Cotta Company has recently been incorporated with a capital of $1,500,000 and has acquired property at Woodbridge, New Jersey, for the immediate erection and equipment of a model terra cotta plant, with facilities and improved equipment that will result in the production of a superior grade of terra cotta with a guarantee of deliveries being made promptly. This plant, which will be the largest in the country will be completed by April 1st, 1910. The land purchased at Woodbridge, New Jersey, has siding connections with the Pennsylvania Railroad, and is also situated on the deep waterway, Woodbridge Creek, providing a waterways shipping route for the company to all coast ports.

The importance of this new company's advent is enhanced by a consideration of the strong list of names in its directorate headed by its president, De Forest Grant former president of the Consolidated and also of the Atlantic Terra Cotta Companies, having been in this business for the past twelve years and recognized as an authority on terra cotta and its production. The first vice-president, Edwin Thorne, is also president of the Polar Construction Company; and a director of the Northern Securities Company, New York Dock Company, Granby Consolidated Mining, Smelting and Power Company and of Fitch, Cornell and Company. The second vice-president, William Manice, is a member of the firm of Manice and Perry and a director of the American Terra Cotta Company, the Atlantic Terra Cotta Company, Cannelton Coal Company, of West Virginia; Capitol Traction Company of Washington, D. C., and the Commonwealth Insurance Company of New York. The secretary, Dwight W. Taylor is a director of the Atlantic Terra Cotta Company and secretary and trustee of the Berkshire Apartment Association. This board while well and favorably known in the terra cotta field and the general financial world, is also strong with architects and builders, a most important consideration.

The treasurer of the new company is Frank A. Thayer, treasurer of the Boldt Steel Company of Wilmington, Del., and additional directors are, John E. Berwind, of the Berwind & White Coal Company; Edwin J. Stettinius, president of the Diamond Match Company; Rodney Thayer, vice-president and general manager of the Boldt Steel Works; William B. Dinsmore, of Meikleham & Dinsmore, bankers, and Madison Grant, general counsel of the company.

In addition to this strong directorate, the following well known men are also financially interested in the company, Stuyvesant Fish, Goelet Gallatin, H. Holbrook Curtis, H. A. Berwind, B. N. Duke, William De Forest Hayes, Schuyler Schieffelin, Lewis R. Morris, Norman Grant, E. H. Wells and Alfred H. Bond.

The new company has ample financial resources and there is little doubt but it will soon be recognized as the leading enterprise in the terra cotta industry.

FIREPROOF TOWN FOR NEW JERSEY

On a big tract of land in Orange, N. J., which has laid undeveloped for many years, there has been started a unique building venture. The residents of Orange call it a "fireproof village." It is a colony of houses built entirely of terra cotta, designed to be fireproof inside and out.

There has not been attempted before any such large development of the "fireproof home" idea. Isolated house of the kind have been built, but here there are twenty-four of them going up at once, as a beginning. Though they differ in architectural style, they are all alike in their structural qualities. Terra cotta, in the form of hollow blocks, is the basic material. It is used for walls, floors and partitions.

The novel system of construction is largely due to the rise in the price of lumber in recent years. The cost of frame dwellings has approached so closely the cost of masonry dwellings that the saving in maintenance and insurance on the fireproof structures more than makes up for the difference in original cost. This economic consideration is the element that has caused so many homes of sturdy, permanent construction to spring up in the last two or three years.

The new colony in Orange calls for by far the largest order of hollow terra cotta blocks ever used in residence construction. Six thousand tons of burnt clay material are being shipped from the Perth Amboy factories of the National Fireproofing Company. In terms of measurement, this means 500,000 square feet.

In the walls and petitions the blocks are laid end on end, so that the hollow spaces form continuous chambers from top to bottom. These "dead air" spaces, as they are called, make the walls non-conductors of heat, the result being a cooler house in summer and a warmer one in winter. In the floors the blocks are laid in rows between masonry beams, and any kind of surface flooring that individual taste calls for may be placed on top of them.

INSTANTLY KILLED BY ELECTRIC SHOCK

Edward Rowley, thirty years old, an employe of the old Armstrong Brickyard at Roseton, N. Y., met death in a most peculiar manner. Rowley, in company with John Leonard, foreman of the yard, and a Hungarian named Andrew Fosegar, was boring for clay. A long steel or iron drill is used for this work and it is quite heavy. The men were working under some electric wires that cross the fields on poles. There are three wires on top of the poles that carry a heavy current used for power, and two lighter wires on the side that are said to be telephone wires. When the men were pulling the drill out of the hole where they had been boring for clay it toppled over and struck one of the heavily charged wires on the top of the poles. Instantly all three men were knocked to the ground senseless. Leonard, the foreman, was the first to come around. He managed to crawl over to where Rowley was lying and found that he was dead. The Hungarian was not seriously injured.

Leonard says that he had ordered the current turned off from the heavy feed wires some days ago, and supposed that it had been attended to, or the men would not have been working under them with a metal drill.

Rowley, the dead man, was married and leaves a wife and five children. He was at one time a resident of the city, where it is said he was employed as an insurance agent. Coroner Buss was summoned and after viewing the remains gave a verdict in accordance with the facts.

POTTERY NEWS ITEMS

The United States Potteries Co., 83 Montgomery St., Jersey City, N. J., has been incorporated with $100,000 capital stock by J. L. Wells and W. M. Parke of New York City and C. T. Lark, of Hackensack.

The Bohemian Pottery Co., Zanesville, Ohio, has been incorporated with $15,000 capital stock by Edwin S. Munch, John H. Stroop, C. A. Maxwell and others.

The Eljer Co., is making a large addition to their pottery at Cameron, W. Va., which is now well under way.

The Kirkwood Pottery Co., Roseville, Ohio, has increased its capital stock from $15,000 to $35,000.

The Willets Pottery at Trenton, N. J., is to be started again. Leslie C. Pierson, the receiver of the old company is president; E. C. Hutchinson, John E. Gill and Dr. Costill are also interested. The plant is a 13 kiln plant and the largest white ware pottery in the city.

The three large potteries located at Wheeling, W. Va., formerly the property of the Wheeling Potteries Co., are to be sold in December.

Col. Will A. Rhodes, secretary of the Colonial Pottery Co., East Liverpool, Ohio, has resigned and goes on the road again for Knowles, Taylor & Knowles Co. Edward J. Touhill of Chester succeeds Mr. Rhodes as secretary of the Colonial Pottery Co.

J. W. Boch will soon complete the construction of a large electric porcelain plant at Newell, W. Va. Every item made in the factory is patented by Mr. Boch.

The plant of the Roodhouse (Ill.) Novelty Pottery Co., costing $30,000 is to be sold at sheriff sale, December 4th.

The Grafton (W. Va.) Pottery Co., has been incorporated with $50,000 capital stock and will manufacture all kinds of pottery and stoneware. They will also manufacture silica brick for the lining of glass furnaces. C. M. Raile, of Clarksburg, is the promoter of the plant.

At a meeting of the stockholders of the Knowles, Taylor & Knowles Co., East Liverpool, O., Joseph G. Lee, who for 20 years has served as its secretary and manager, tendered his resignation and W. L. Taylor and Homer J. Taylor were elected to general manager and secretary.

According to reliable advice, the defunct Salineville, O., Pottery is about to be sold to responsible parties and again placed in operation.

The October meeting of the Western Standing committee was one of the most interesting held during the summer or fall, because of the small number of new items presented. The result of the conference is as follows:

Bakers—Submitted by the Smith-Phillips China company. The price for making this item was settled at 10 per cent over list price.

Teapot and Sugar—Submitted by the Warner-Keffer China company. The teapot case was settled at 18 cents and the sugar at 23 cents. It developed that the firm was willing to give the men their price for the making of the sugar, but only offered 20 cents for the making of the teapot. This is the price for jiggering only. The Sebring Pottery company at Sebring, O., has got out a new specialty known as the coupe nappy. The firm offered in the first place to pay the men seven and one-quarter cents for making this, but a price of 10 cents per dozen was asked. When the Standing committee took the matter in hand a price of eight and one-half cents a dozen was settled upon.

SAND OR LIME BRICK OR BLOCK NEWS

The Austin (Minn.) Cement Tile Co. has bought 15 acres of land on Kenwood Ave., and will use same at their works.

E. L. Gains & Son, at Pymatuning, Mail Transfer, Pa., is making a fine quality of cement block and brick on the McMurray farm.

The Galien (Mich.) Concrete Tile Co. has filed articles of incorporation with $5,000 capital stock. The company succeeds, Roberts Bros., and will make both brick and tile.

The Wisconsin Composite Brick Co., Milwaukee, Wis., have been served notice to stop violating the anti-smoke ordinance. Ald. Henry Smith is the president of the company.

By the breaking down of a brick machine of the Compress Flint Brick Co., 14th and Elmwood, Kansas City, Mo., Alfred Earl, the foreman, was injured and the plant damaged badly.

The Sioux Falls (S. Dak.) Pressed Brick Co. are experiencing great difficulty in securing cars in which to load their brick for shipments. They are making a fine quality of sand-lime brick.

The Range Brick Co., at Hebing, Minn., has found the necessary sand so as to build an $8,000 brick plant in which to manufacture sand cement brick. C. A. Remington, a well known lumber dealer, is interested.

The Suffolk (Va.) Cement & Tile Co. has been incorporated with $10,000 capital stock. They will manufacture sand brick, sewer and drain tile. Joseph T. Williams is president; W. H. Eley, secretary and treasurer, and T. W. Sampson, general manager. The above are all directors and live in Suffolk.

The National Stone & Brick Co., Columbus Bldg., Washington, D. C., opened proposals for machinery for their plant which is to be built at Takoma, D. C., at the rate of 75,000 brick daily. Albert S. Hicks is president of the company; Richard J. Beall, vice-president; Walter A. Johnson, treasurer, and Chas. G. Allen, secretary.

BARTLETT BRICK COMPANY SALE

An important sale was conducted on the Court House steps at Newburgh, N. Y., when Edward W. Collins, as one of the receivers of the Bartlett Brick Company, of Hudson, sold the property, including fifteen brick machines, buildings, sheds, and horses of that company at auction, together with the property of the Bartlett Company in Hudson. A lease on the Armstrong brickyard at Roseton, which is held by the Bartlett people was sold. The terms of the sale were to sell both pieces jointly, first; then separately, and the way that brought the highest price was to prevail. When the pieces were sold jointly the only bidder was William F. Cassedy, representing John B. Rose, Dr. Townsend and Everett Fowler, who were directors of the old Bartlett Company. Mr. Cassedy's bid for both pieces jointly was $100,000. When the parcels came up for sale separately there were two bidders for each piece, Mr. Cassedy and C. L. Waring. The Bartlett plant at Hudson was bid in by Mr. Cassedy for $86,000, and he also bid in the Roseton lease for $84,750. The total price paid for the whole was $170,750, by Mr. Cassedy.

Haigh's New System of Continuous Kiln Arranged to Suit all Locations

These Kilns can be seen burning Roofing Tile, Drain Tile, Dry Pressed Facing, Fire, Paving and Common Building Brick

Points of Superiority: Cheapness in construction. Easy to understaud and operate. Perfectly free from any nuisance. Will save more than one-half of the fuel used on other Kilns Specially adapted for Utilizing Waste Heat for Drying Purposes, and which is being done most successfully

Address, H. HAIGH, Catskill, N. Y.

MISCELLANEOUS ITEMS

The Diamond City Brick Co., Wilkesbarre, Pa., has been organized with $60,000 capital stock.

The Ft. Smith (Ark.) Vitrified Brick Co. has just completed another kiln of 450,000 brick capacity.

It is reported that E. A. Glousnitzer, Quanah, Texas, will erect a 25,000 brick daily capacity plant.

The property of the Dow Brick Co., Columbus, O., has been appraised at $20,949 by the appraisers.

With an output of 1,500,000 brick this was the busiest year for Samuel Landis at New Berlinville, Pa.

The Farmersburg (Ind.) Brick & Tile Works has started up again after being shut down to install some new machinery.

Will Stephens, Batavia, O., has recovered from his recent illness and has resumed charge of the brick plant at Baltimore

W. M. Shipman, Treswell, Tenn., has 40 acres of fine fire clay land and is considering organizing a company to develop same.

The Mayer Bros. Brick Co. plant east of Frostburg, N. D., is rapidly being completed and will soon be making bulding and paving brick.

The Moist-Proof Pressed Brick Co., Norfolk, Va., have about completed its plant and will soon be making 50,000 brick daily, buff and cherry red waterproof brick.

The Cleveland (Okla.) Brick Co. have received an order from the packing company of Morris & Co. to furnish 8,000,000 brick to build the $3,000,000 packing plant at Oklahoma City.

The Bloomdale (O.) Tile & Brick Co. expect to run their plant all winter with the possible exception of January or February. Drying sheds are being built and preparations being made for cold weather.

The large brick works just east of Piedmont, W. Va., has been leased to J. A. Lansberry, C. A. Lansberry and Colin Graham of Mt. Savage, Md., and George Wendell of Cumberland, they will remodel the plant and operate same.

The Audubon (Ia.) Brick & Tile Works, owned by Tramp Bros., is being moved to another part of the city and will rebuild so as to make brick the year around, and have railway connections to get in their coal and ship their goods. The work will be completed during the winter.

A brick and tile company with $100,000 capital stock is to locate a plant on the E. H. Denton farm, just north of Garland, Bourbon Co., Kansas, where 60 acres of land has aready been purchased by Dr. Cline and others of Joplin, Mo. A thick vein of surface coal is found at a shallow depth on the property.

The Drury Brick & Tile Co., Essex Junction, Vt., has contracted to ship 1,500,000 brick to Winooski at once.

The John C. Boss Co., Elkhart, Ind., has been incorporated by A. B. Boss, John C. Boss and Edward A. Boss.

The Alliance (O.) Brick Co. have their plant well under way. A. Hoover, a most successful brick manufacturer, is the general superintendent.

F. M. Pollard, who owns a brick yard at Salmon, Idaho, has just finished a 350,000 kiln of brick, making the best that he has ever turned out.

Brick for the Elks' Block at Mason City, Iowa, were shipped from Chicago on account of the local plants being too busy making tile to make brick.

The Williamsburg (O.) Brick Co. is having a very prosperous season under the management of R. R. Mills, who is making a superior quality of brick.

B. H. Richards, Jr., secretary of the Richards Brick Co. at Edwardsville, Ill., was married to Miss Clara C. Tuxhorn and they are now on their honeymoon.

The Bangor (Me.) Brick Co. made 3,250,000 brick this year, and the yard is closed down until 1910. The company will install motors to operate the treads instead of horses.

Slimmer & Paul, 8th and Church Sts., Upper Sandusky, Ohio, have purchased the Wm. Cavanaugh brick yard at Sycamore, Ohio, and will remove machinery to there and increase its capacity.

The Lanius Pressed Brick Co., Abiline, Texas, have contracted for the new dry press which is to be installed in their plant so as to double the capacity of the plant and take care of the demand.

The Albama Fire Brick Mfg. Co., has increased its capital stock to $200,000 and at a special meeting of the directors decided to build at Riverside, Ala., a plant to make fire brick, fire-proofing, face brick, conduits and blue linings. The main office is in Birmingham.

NOTICE

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All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue W. C.

AMERICAN PROCESS CO.,
68 William St. **NEW YORK CITY**

The Grahan Brick Works of Emmett, Idaho, made one million brick this year, all used in the home town.

E. B. Grubb, Loveland, Colo., is erecting a pressed brick plant on Derby Hill which will cost $20,000 and will have a daily output of 20,000 brick.

The Adair Brick, Coal, Mercantile & Construction Co., Kirksville, Mo., has been incorporated with $6,000 capital stock by Daniel Kent, S. L. Eggert and E. B. Reed.

The Logan (O.) Brick Supply Co. shipped 775 carloads of brick from their plant this year and have 3,500,000 left. In all probability the plant will be started again next year.

Sullivan & Spielman of Gillette, Wyoming, have completed the burns for this year after a very successful season. They will open in the Spring on a more extensive scale.

Benjamin Kissinger's Sons, York, Pa., turned out 6,259,000 brick in the first nine months of this year. They claim the demand for brick is over 75 per cent more than in 1908.

The Illinois Brick Co. has bought the LaBahn Brick Co.'s plant at Lansing, Ill., thus increasing their capacity 200,000 brick daily. Mr. John F. LaBahn, the founder of the company, will retire.

Frank Cole has resigned as manager of the Marion (Ind.) Brick Works and is going to Norfolk, Va., to assume the management of a plant there. Mr. Cole is favorably known to the contractors and builders of Indiana.

The Independence (Kansas) Brick Co. has filed articles of incorporation with directors as follows: Robert Nesch and S. C. Barrett of Kansas City., R. C. Nesch of Pittsburg, O. M. Balch of Chanute and Harry Jiencke of Independence.

The Central Georgia Brick Co., Macon, Ga., decided to rebuild their plant at once which was recently destroyed by fire. Jesse B. Hart is president; J. B. Wall, superintendent and manager; J. F. Hart, treasurer, and W. N. Hart, scretary and sales manager.

The Michigan Vitrified Brick Co., Bay City, Mich., will build new kilns and double the capacity of their plant. W. F. Jennison has been elected president and J. Barnett, secretary and manager; J. C. Downing is the superintendent. A new dryer will be installed.

The Columbus (Kansas) Brick & Tile Co. is to be consolidated with the Elkhorn coal mine near Scammon, with $30,000 capital stock and $10,000 bonds, and the brick plant enlarged 100 per cent. H. A. La Rue, Dr. Huffman and others are boasting the project.

The Edgar (Wis.) Pressed Brick Co. has filed notice of dissolution.

Ernest B. Griffin of Grant Park has purchased the entire property of the Eastern Illinois Brick Co., at Beecher, for $10,500.

The stockholders of the Leavittsburg (O.) Brick Co. will meet in a few days and take the necessary steps to surrender its charter.

The Acme Brick Co., Lumberton, N. C., has been incorporated with $125,000 capital stock by Geo. G. French, I. B. Blackman and A. K. Morrison.

The College Hill Press Brick Works, St. Louis, Mo., last week bought a block of land bounded by Carrie, Florissant, Pope and Rosalie Streets.

Grayville, Ill., is organizing a $150,000 Vitrified Brick Co. John A. Helm, president of the Business Men's Association is responsible for the movement.

A $10,000 brick and tile factory has just been completed at Coalville, Utah, by J. H. Decker of Kansas City, Mo., and N. W. Clayton and E. S. Fisher of Coalville.

The prospects are favorable for a brick plant at Ellsworth, Kansas. Clays have been tested for making brick, etc. The Central National Bank can give information.

The Glenwood (Wis.) Advancement Association is making an effort to secure a brick making plant. It is claimed that some of the finest clays of the State are found there.

Henry Rorig, of Elgin, Ill., may organize a company at Elgin to manufacture brick for building purposes of gumbo, near Pierre, S. Dak. He has samples made by a new process.

The brick makers working at the Manteno (Ill.) Brick Co. Works struck because a die wore away so as to make the brick a little longer. After the dies were rebuilt they returned to their work.

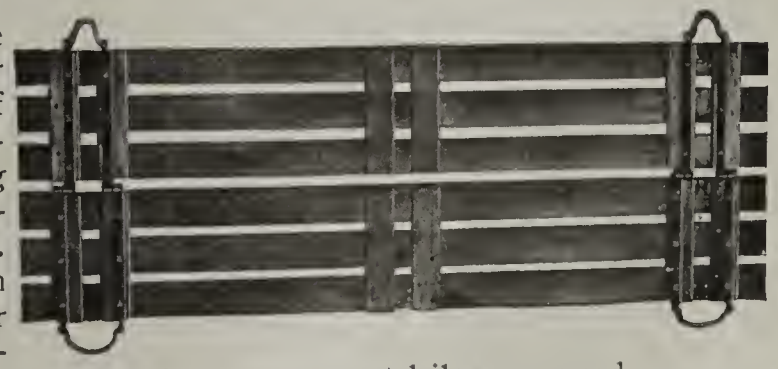
George R. Gray, a brick manufacturer, is seeking a site for making brick on the So. Bellingham, Wash., water front, he having found clay on the Lake Samish road suitable for making excellent brick.

Raymond N. Bond, the western representative of the C. W. Raymond Co., Dayton, O., made a contract with the Little Falls Brick Co. at Tacoma, Wash., for a complete brickmaking outfit, costing $55,000.

The Farmers Co-operative Brick & Tile Co., Mason City, Iowa, will increase its capital stock from $400,000 to $800,000 for the purpose of erecting the second brick and tile plant south of the city, the later will be called the Farmers' Co-operative Clay Works.

The Johnson Non-Detachable Folding and Sliding Deck

Is adapted for any style of Dryer Car



The deck can be placed on either side or center of the car for loading or unloading without removing from the car.

The Johnson deck is a labor and material saver, and is especially so when permanent kilns are used.

The Johnson deck can be made of wood, steel or galvanized iron and of malleable iron or drop forgings.

For further information address

CHARLES H. JOHNSON, 1824 Greenleaf St., Chicago, Ill.

FOR SALE

One Penfield power Repress in first-class condition, capacity 10,000 per day, used only one month, write for particulars.

American Enameled Brick & Tile Co.
1 Madison Ave., New York City.

FOR SALE

One Four Mold Simpson Dry Press
One Fernholtz Pulverizer.
One 40 h. p. Engine and Boiler. Also shafting, pulleys, etc. Have extra mold box for dry press. Will sell all or any part of this machinery.

ED. SHANNON,
Shellsburg, Iowa

Second-Hand Brick Machinery For Sale

1 two-mold brick press.
1 three-mold brick press.
1 six-mold brick press.
1 42-inch clay pulverizer.
1 Freese stiff-mud auger machine, pug mill and cutter.
1 Centennial auger machine and cutter.
1 clay mixer.
2 small engines.
Let us know your wants.

Scott Manufacturing Company,
1811 Third National Bank Bldg St. Louis, Mo.

Brick Plant for Sale or Lease

A cenveniently located brick plant on the main channel of the James River, 90 miles from Richmond. 18 miles to Newport News, and 40 miles to Norfolk, all having a good steady market for brick. Easy transportation for large boats. Want to see plant in operation. Therefore would make very easy terms. Address MRS. AGNES L. TURNER,
Ferguson's Wharf, James River, Va.

FOR SALE

One No. 9A Brewer Tile Machine with hand Brick and Tile Cutters, Brick Dies and Tile Dies 3½ to 8 in. One 40 horse power Engine.

C. L. FINK,
Bricelyn, Minn.

WANTED

One good copy of the Clay Record, Number 10 Volume 16, to complete files for a ceramic school library. Address ROSS C. PURDY,
Ohio State University,
Columbus, Ohio

FOR SALE

Plans and Rights of Round Down-draft Continuous or Semi-Continuous Kilns. Both types possess new and improved features Address

William Radford,
Phoebus, Va.

HAMPTON'S KILNS

Burn 99 Percent Hard Brick and Tile
Old kilns easly changed.
Plans and yard rights cheap.
We Build Kilns and Guarantee Them
PITTSBURG KILN CONSTRUCTION CO.
618 14th St., N. E. Washington, D. C.

DRY PRESS FOR SALE

We have for sale one American four mold dry press, as good as new. A bargain if sold at once.

Des Moines Clay Mfg. Co.
Des Moines, Ia.

BRICK PLANT FOR SALE

Well known and good market in the city of Minneapolis. Plant is running at present. Will sell equipment and yard including horses. If deal is made quick owner can make brick this fall for spring trade. Address

Minuesota, care Clay Record,
Chicago. Ill.

POSITION WANTED

Saud-lime brick manufacturer, 15 years experience, highest references, wants position as Manager or Superintendent of a sand-lime brick plant. Capable to build a plant, to run it and to make it pay. If you cannot make money now call upon me.

Address "SAND-LIME,"
Care of Clay Record, Chicago. Ill.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE

Sand-Lime Brick Plant in excellent condition, making granite pressed facing brick and standard grade of sterling quality. On four railroads, close to large markets. good trade, unable to fill orders now. A snap if taken at once. Write us.

Address "506" Care of Clay Record,
Chicago, Ill.

FOR SALE

The Entire Plant of The Powhatan Clay Mfg. Co.

Operating continuosly since 1893 at Clayville, Virginia, manufacturing the universally known Powhatan Front Bricks. The entire plant empracing 800 acres of land, employees' buildings, store, good will, etc , is offered at advantageous terms. Address,

14 North 7th St., Richmond, Va.

WANTED

A practical brick and tile man to take the management of a brick and tile plant and invest some money. No tile plant within 100 miles Cannot supply the demand. Everything up-to-date in machinery, dryers, kilns, etc. Located in Michigan.

Adddress "MICHIGAN" Care of Clay Record,
Chicago, Ill.

FOR SALE CHEAP

Four Mold Ross-Keller Brick Press in good working condition. CHISHOLM, BOYD & WHITE CO.,
57th & Wallace Sts., Chicago, Ill.

FOR SALE

Two second hand American Clay Machinery Co. No. 2 Automatic Cutters.
One Western Wheel Scraper Co. No. 2 Jaw Crusher.

Hydraulic Press Brick Co.,
Brazil Branch,
Brazil, Ind.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio
Address A. B. care Clay Record.
Chicago, Ill.

FOR SALE

A brick and tile plant in Green County, Iowa. Cannot supply the demand. All new machinery. Good reason for selling. Write for particulars to GREEN, Care of Clay Record
Chicago, Ill.

WANTED

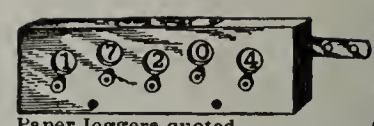
A young or middle aged man, of habits, strictly good, honest and reliable, one who is experienced in the manufacture of clay products and also able to handle correspondence pertaining thereto, and the use of machinery for the manufacture thereof, for position in sales department of reliable machinery manufacturer. In reply to this advertisement state salary that would be expected and give several references as to ability and character. Address.

Sales Dept. Care of Clay Record,
Chicago, Ill.

LOCATION OR PLANT WANTED

I am looking for a location or preferably a plant partially or ready to run for making clay products; such as drain tile builders and pavers, in fact a good shale and fire clay proposition, preferably in Indiana or Illinois, on good road or roads Will buy a managing and sales managing interest or all if conditions are right. Address

"LOCATION" Care of Clay Record,
Chicago, Ill.



No better made, cut iron
$8 and $10, to
4 Wheel, $3.00
5 Wheel, $3.25
Guaranteed.
Sold by all dealers

Paper Joggers quoted.
R. A. HART, 41 White St., BATTLE CREEK, MICH

GOOD OPENING FOR CAPITAL AND EXPERIENCE

For the purpose of making enlargements would like to interest capital in clay plant, have dry press and stiff mud outfits, making fire brick, face brick, hollow building tile, fire proofing and common brick. Located in the west and have a great advantage in freight rates over a good market on fire brick, fancy face brick, tile etc. Have immense deposits of high-grade fire clay, several varieties of shale and unlimited quantities of good surface clay. Would prefer to interest parties practical in clay working and will offer good inducements.

A. N. M., Care of Clay Record,
Chicago, Ill.

WANTED

To sell all or a two-thirds interest in an up-to-date Brick Plant and Coal Mines, excellent shale for street block, 12 feet of fire clay, two coal mines, both operated with compressed air machine, with more orders than can be taken care of. An excellent proposition and a money maker, good reason for selling, Manager wants to go South. If interested write to, "BERT" Care of Clay Record
Chicago, Ill.

DRYER CARS

We have on hand a lot of second hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, Ohio

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick. Address,

FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE

One Form Mold Berg Dry Press. good as new. Made about 200,000 brick. Guarenteed in good working order. Address

BUCKEYE FIRE BRICK & CLAY CO.,
Scioto Furnace, Ohio

FOR SALE

Brick Yard within easy hauling distance of Chicago. 13 acres, well equipped plant. Would lease or make good proposition to man to make investment and run the plant. Address

FRANCIS LASLOW,
79 Walnut St., Oshkosh, Wis.

FOR SALE

New Sand Lime Brick Hardening Cylinder, 6 feet diameter by 68 feet long. One removable head. Immediate shipment.

FRANKLIN BOILER WORKS CO.,
Troy, N. Y

PLANT FOR SALE

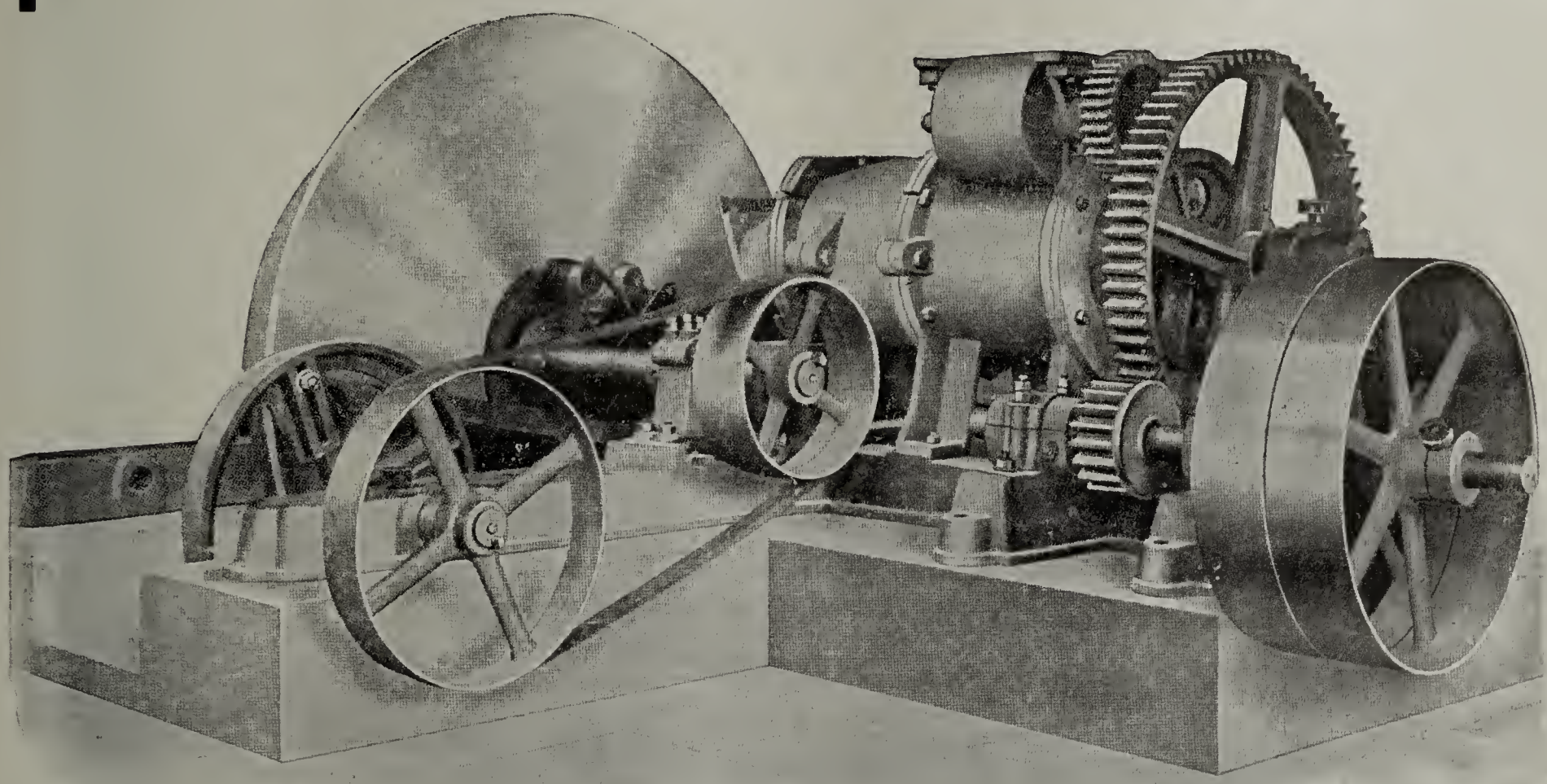
Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capacity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7.00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches. Immense demand and no factory in 200 miles. Cheap fuel and labor; can operate with steam dryer year around. Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments

W. L. JONES,
Lock Box 5, Williamsburg, Va.

75 Cents vs. 15 Cents

The cost of cleansing clay by the filtering process is 75 cents or more, per ton. The Diesener Clay Cleanser takes all the dirt, that cannot pass through the 1-16 in. slot, out of the clay for less than 15 cents per ton, and does the work better than the filtering process, because it does not remove the valuable kaolin sands and other important ingredients that should be left in the clay.

The Diesener Clay Cleanser



Eliminates Limestone—or Pyrites Troubles

This machine takes out the objectionable matter without necessitating the process of crushing

The Diesener Clay Cleanser works upon plastic surface clay AS IT COMES FROM THE BANK, after this clay has been well tempered and pugged in a suitable pug mill. The process of cleaning is as follows:

An auger machine (as shown in the above halftone) pushes forth a solid bar of well-pugged and watered clay in stiff mud condition. This bar slides down an inclined plane and is pushed against a rotary disc. The material of this disc is a special iron alloy, discovered after many costly experiments.

The disc by friction "sucks" the clay into and through a slot, and the foreign matter like PYRITES, LIMESTONE, PEBBLES, SCREW-NUTS, WEED-ROOTS, and so on, if they are too big to pass through the slot, are caught in it and and REMOVED from it CONTINUOUSLY and AUTOMATICALLY.

We wish to emphasize this particular feature of the Diesener Clay Cleanser—that it does not crush or pulverize the pyrites or limestones and then mix the same into the clay. It takes them out without crushing or even without breaking.

Richard G. Hoffman

Sole Representative in the U. S. for Mr. H. Diesener, Charlottenburg, Germany

La Grange, Ill.

ANOTHER

American Triumph

The American Eagle Gets the Pole

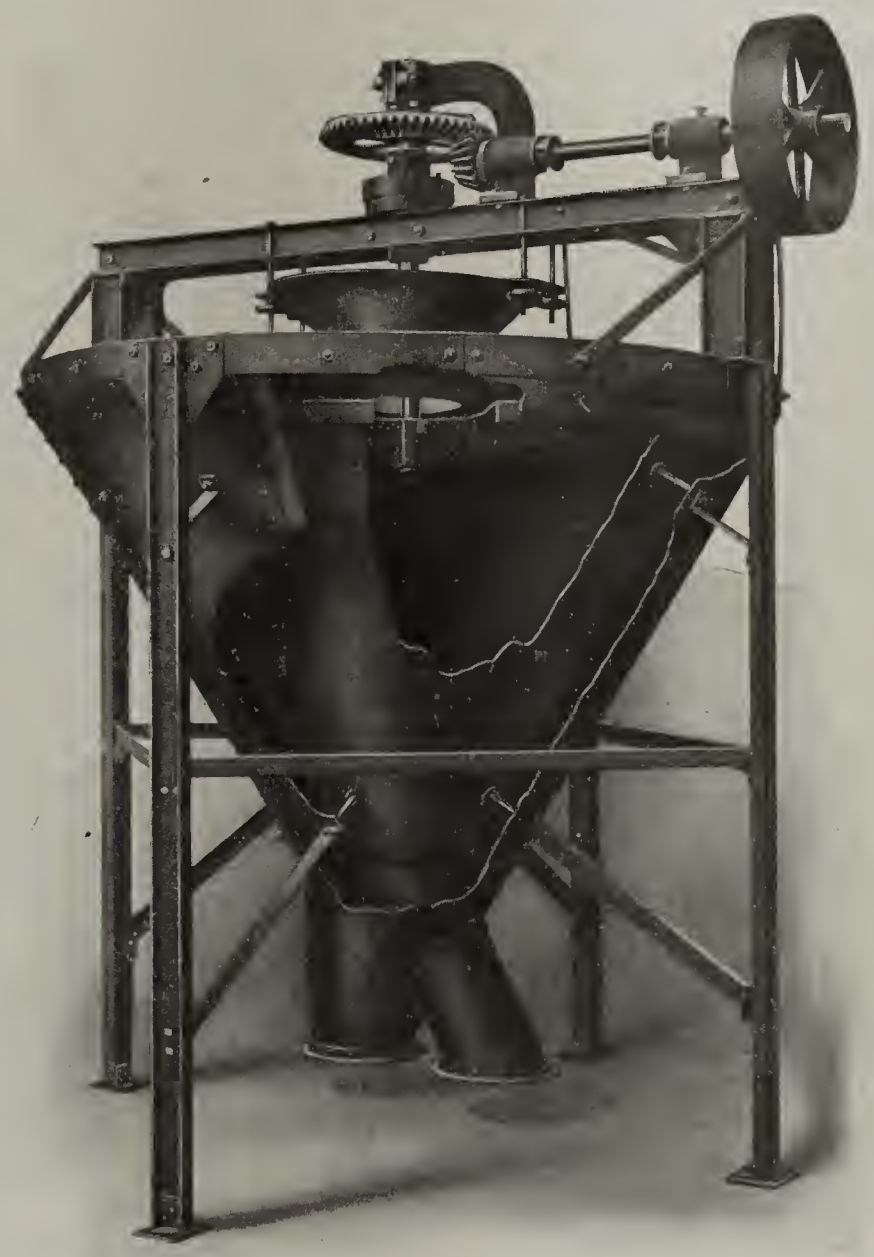
All honor to a standard among Nations and a world-wide standard of machinery excellence

While Peary stops to argue and Cook stoops to cajole,
The Eagle keeps on pressing brick to pave clear to the pole.

Centrifugal Clay Screen

IN OUR NEW CENTRIFUGAL CLAY SCREEN WE HAVE A RADICAL DEPARTure in Clay Screens. The motion is centrifugal instead of vibratory. The life of the machine is thus lengthened and the capacity increased. As the cut shows the screen is made up of two hoppers substantially mounted on a steel frame. The screen plate is circular with large screening surface. It is supported by spiders in a horizontal position. The spiders are keyed to the vertical shaft which is connected to the driving shaft by a pair of bevel gears.

Just beneath the screen plate is a steam coil heater arranged to heat the screen plate to prevent damp clay from clogging perforations in the plate.



Surrounding the vertical shaft is a cast iron hopper or spout through which the clay is fed on the screen plate. This hopper can be raised or lowered to regulate the flow of clay on the screen. The hopper being always full of clay keeps an even flow to the screen. The screen as it revoles throws the clay from the center to the outside of the screen plate, the flow being even and regular. The larger particles of clay, too large to pass through the perforations, pass over the screen plate to the outside and fall through the outer housing to a spout conveying them to the grinding pan for regrinding. The fine particles of clay sift through the screen plate into the inner housings or hopper and pass to a conveyor and into a clay bin.

The whole operation is rapid and thorough and the principle insures great capacity and freedom from troubles. Many of these screens have been installed and are giving universal satisfaction

In actual operation the No. 147 Screen, which has a screen plate six feet in diameter, is screening equal to the capacity of two nine-foot dry pans. We also build this screen with a four foot screen which will handle clay to the capacity of one pan. Full particulars as to construction and operation of this screen will be sent upon request

We build every machine and appliance required for the manufacture of every class of clay products by all processes. We are much the largest manufacturers of Clay Working Machinery in the world. Manufacturing as we do every machine and appliance right in our own factories we are better prepared to serve you at a saving in time and money than are others.

Built Right Run Right

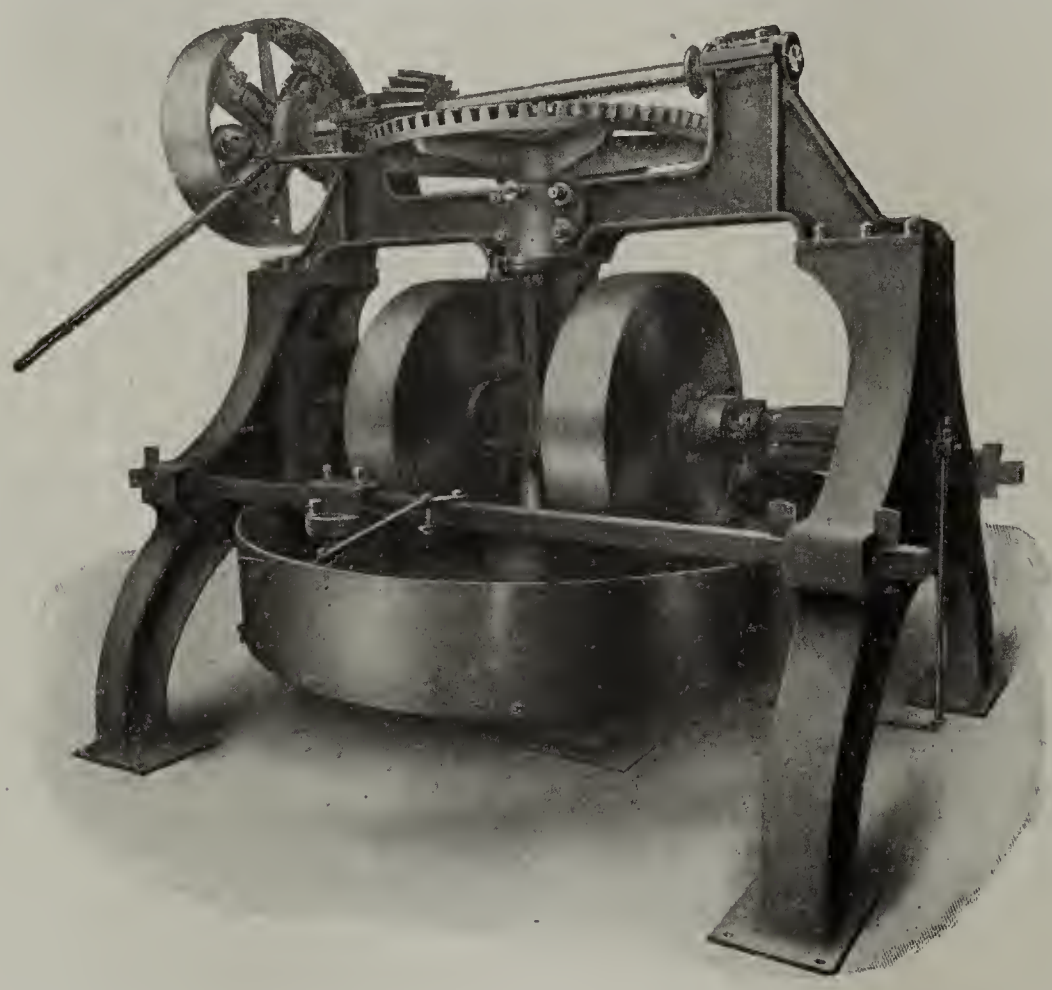
The American Clay Machinery Company

Bucyrus, Ohio, U. S. A.

Built Right Run Right

Wet and Dry Pans

TO THE EXACTING BUYER OF DRY AND WET PANS OUR LINE APPEALS strongly because of the superiority of design and excellence of material and workmanship all of which are features which are of the greatest importance in the permanent satisfactory operation of pans. The capacity of a pan depends largely upon its design and construction, and the distinctive features embodied in our line of pans have given them a greater capacity than others and have insured more working hours per pan with fewer delays and repairs than can be had from other styles of pans. We have been generous in the design of each pan our lines being the heaviest on the market. This feature should be given special consideration as a lighter weight pan is necessarily much cheaper and should not be compared with our heavy, durable and efficient machines.



The heavy side frames are substantially tied together at the top by the cross beam, in the center by tie bars and also on the floor line. The shafting is large and of steel. The gears are of special design and excellent quality. The bearings are long and well babitted. The mullers are heavy, adjustable and removable. The screen plates are made of special iron. The step is of our approved type and the complete pan is one that can be depended upon under more than ordinary circumstances. All joints are carefully machined and fitted and bolts are made secure by lock-nuts. The vertical shaft and muller shafts are secured by large removable bearings, which make it possible to remove any of these shaftsor the mullers without disturbing the balance of the pan. The gearing is kept to its full efficiency by our device for taking up any possible wear, which insures a perfect mesh of teeth at all times.

For preparing successfully many kinds of fire clay, shale and slate used for paving brick, and for grinding burnt brick or pipe for grout, etc., dry or wet pans are a necessity. The wet pans are particularly adapted for handling material in moist condition, while for use in dry pans it should be practically dry, so that when ground, it will readily pass through the screen plate without clogging.

Write for particulars on our "Divided Screen Plate" which will make a big saving of screen plates. There in no machine required for the manufacture of any clay product which we do not build. Each machine is superior in it's class and of our standard quality.

Built Right Run Right

The American Clay Machinery Company

Bucyrus, Ohio, U. S. A.

Built Right Run Right

THE BOSS SYSTEM OF BURNING BRICK

Involves the ORIGINAL PRINCIPLE of applying AIR UNDER PRESSURE.

Applies to Any Style of Kiln.

Absolute Control of Heat in Kiln.

WRITE FOR CATALOG

40% Reduction in Fuel Cost.

Burns All First-Class Hard Brick

JOHN C. BOSS OFFICE: MONGER BLDG. **Elkhart, Indiana**

Do Your Brick Turn White?

HERE IS THE REMEDY.

PRECIPITATED

Carbonate (K.B. C.F.H.) **of Barytes**

The only preventative for scum and discoloration on facing Brick and Terra Cotta; neutralizing the Sulphate of Lime in the Clay and Water.

Circulars and Particulars on Application.

GABRIEL & SCHALL

205 Pearl Street NEW YORK P. O. Box 1712

They Never Fade

Twenty long years of time and weather have tried out Ricketson's Famous Red Brick" Brand

..COLOR..

for Mortar, Brick, Cement, Stone, etc., Proves it Absolutely Permanent. Red, Brown, Buff, Purple, Black.

RICKETSON MINERAL PAINT WORKS
MILWAUKEE, WISCONSIN.

C. K. WILLIAMS & CO.

EASTON, PA.

BRICK AND MORTAR

COLORING

Send for full descriptive Circulars

New CLAY FEEDERS and MIXERS for Brick, Tile and all Clay Working Plants

Saves the labor of from 1 to 2 men in every factory, besides mixing and feeding the clay evenly to the disintegrator

One of the many testimonials we have received from users of these Feeders

SUMMITVILLE DRAIN TILE COMPANY
Manufacturers of Porous Drain Tile

Harry L. Erlewine, Secy. and Treas.,
Marion Machine, Foundry and Supply Co., Marion, Indiana

Dear Sir:

Acknowledging your favor of the 21st inst., will state that the type "C" Feeder which we have installed in our plant here is "making good" in every way and is all you claim for it.

Since installing the Feeder we have been able to get along with two men less, thereby reducing our weekly pay-roll $20.00 and at the same time have increased our output 10%, decreased our power 10%, and as our capacity is 1200 cars per year, you can easily see the great advantage we have since installing the Feeder and Mixer.

All this saving is effected because of the even, steady feeding of the clay to our disintegrator. We have our tracks elevated about 9 feet above your Feeder and Mixer, and we are enabled to dump about 25 car loads of clay in our storage bin over the Feeder, and the Feeder takes care of all this clay without any further attention on our part.

We feel that this is one of the most valuable machines we have in our plant and no one who has ever tried one of your Clay Feeders would go back to the old way. Thanking you for the courtesies shown, we remain

Very truly yours,

SUMMITVILLE DRAIN TILE CO., Per JAMES F. MORRIS, Vice-Pres.

MARION MACHINE, FOUNDRY and SUPPLY CO., Marion, Ind.

A TURN OF THE CRANK SAVES 2 MEN'S PAY

THIS wonderful pump does the work of two men, at a small fraction of their wages, and without argument.

It will pay for itself in a very short time. Think of the saving in dollars and cents, the saving in time, the gain in efficiency.

No contractor or engineer who has any quantity of water to contend with can efford to be wiihout the marvelous

Fuller & Johnson

Bilge Pump Engine

It doesn't need to be urged to do its best — it can't do anything else.

It is built with the same care and attention to details, the same thoroughness and honesty, as all Fuller & Johnson Engines.

It's always ready, day or night at a touch.

Each day you're without it you're throwing good money away.

Send for our Bulletin and see for yourself. (21)

Fuller & Johnson Mfg. Co.

Established 1840

458 2nd Street, - Madison, Wis.

Fire Brick——Fire Clay

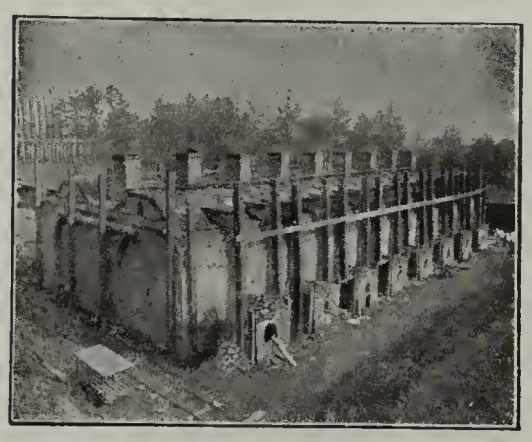
AND FIRE CLAY PRODUCTS

Manufactured out of highest grade Missouri semi-flint fire clay.
A large stock of Number One brick and shapes always on hand.
Let us quote you prices and we will save you money.
Samples sent upon request. Address

Mexico Brick & Fire Clay Co.

MEXICO, MISSOURI

Something New In Brick Kilns and Dryers



The Dennis Double Chamber Up and Down Draft Brick Kilns and Direct Heat and Hot Air Brick Dryers show many new features that make them superior to all others. Economical, durable and strong in construction and operation, having many points of dvantage that appeal to practical brickmakers. Patented April 14, 1903 and September 8, 1903 Brick plants installed and put in operation. Write for booklet. Correspondence solicited.

F. W. DENNIS,
145 Water St., Norfolk, Va.

Approved and Labeled

Fire! Fire!! Fire!!!

Extinguishers

Protect your Home, Business, Factory

Insurance Reduced. Child can Operate.
Made of Copper. Will Last a Lifetime.

Chemical charges can be procured at any drug store

Write today; don't wait; delays are dangerous.

O. J. Childs Company

Sole Manufacturers — Utica, N. Y.

AMERICAN RING-HAMMER PULVERIZER

Two Models, one for Clay, Shale, one for Rock

Will pulverize from 4 mesh to 200 mesh, 1 to 50 tons per hour, according to size of machine, fineness required, kind and condition of material.

30% to 60% less 3peed, and 25% to 50% less power, due to the RING and its utilization of CENTRIFUGAL FORCE

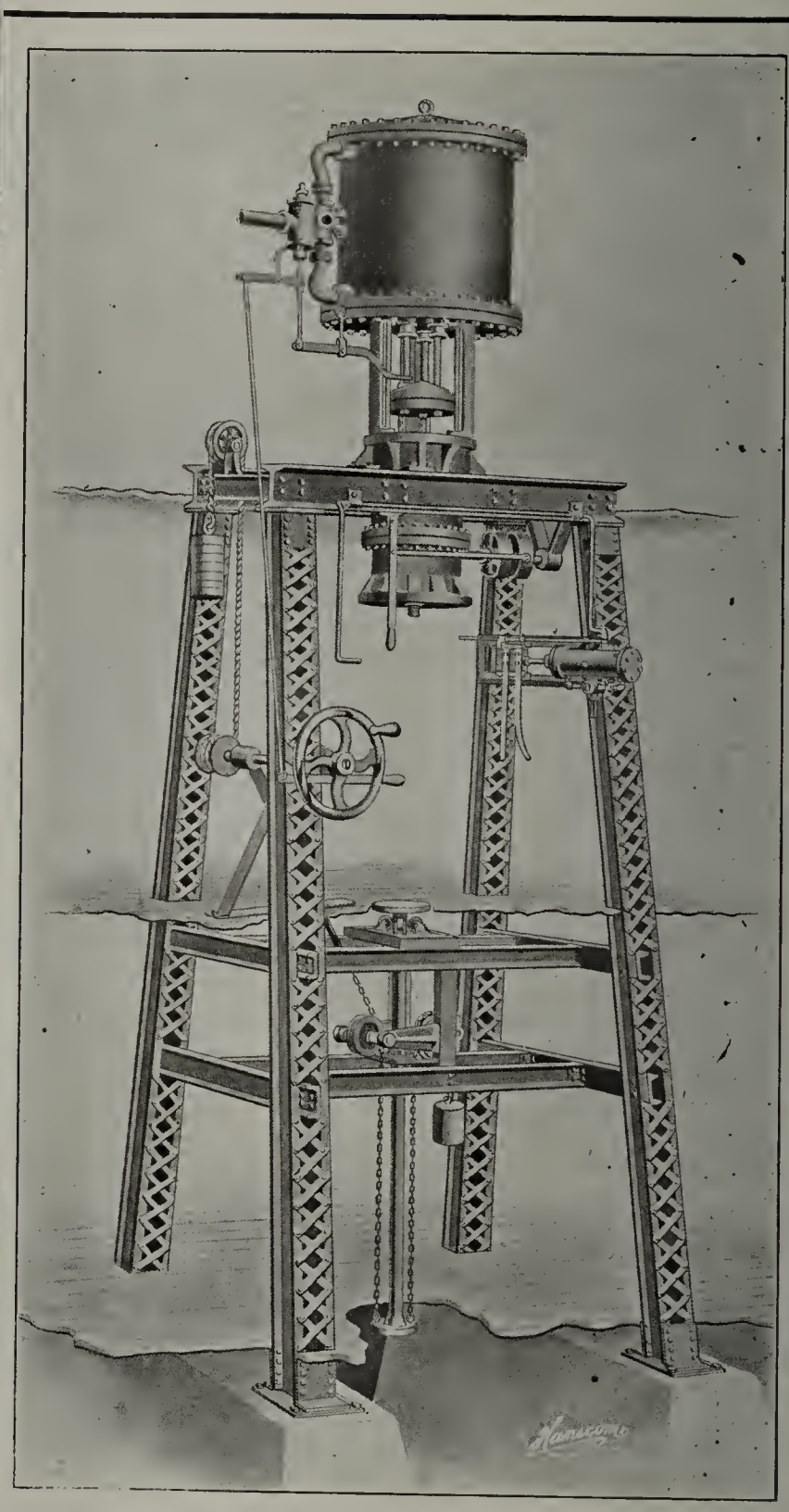
We make six sizes and every machine guaranteed to do the work which it is contracted to do when sold.

Revolving Screens Air Separators
Ask for Circulars and Information

AMERICAN PULVERIZER CO.

Suite 410 Jaccard Bldg., ST. LOUIS, MO.

DISTRICT SALES OFFICES:
F. C. Willis, 36 LaSalle St., Chicago, Ill.
I. R. Coles & Co., 39 Cortland St., New York City.
Lindrooth, Shubart & Co., Boston Bldg., Denver, Colo.



44 X 20 SEWER PIPE PRESS

SEWER-PIPE MACHINERY

COMPLETE EQUIPMENT

THE TURNER, VAUGHN & TAYLOR COMPANY

CUYAHOGA FALLS, O.

REBUILT ENGINES AND BOILERS

The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

ENGINES—Automatic—16x32 Buckeye, 15x14 Erie, 14¼x16 Buckeye, 14½x14 Ball & Wood, 13½x15 Taylor, 13x16 Erie, 12x14 Green, 12x12 N. Y. Safety, 10x10 Fisher, 9½x12 Leffel, 8x10 Allfree, etc.

ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

BOILERS—Stationary—72x18 High Pressure, 72x18 Standard, 72x16, 66x16, 60x20, 60x16, 54x16, 54x14, 54x12, 48x16, 48x14, 44x14, 40x12, 40x9, 36x16, 36x10, etc.

BOILERS—Fire Box—80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 h. p., etc.

BOILERS—Vertical—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 3 h. p., etc.

HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

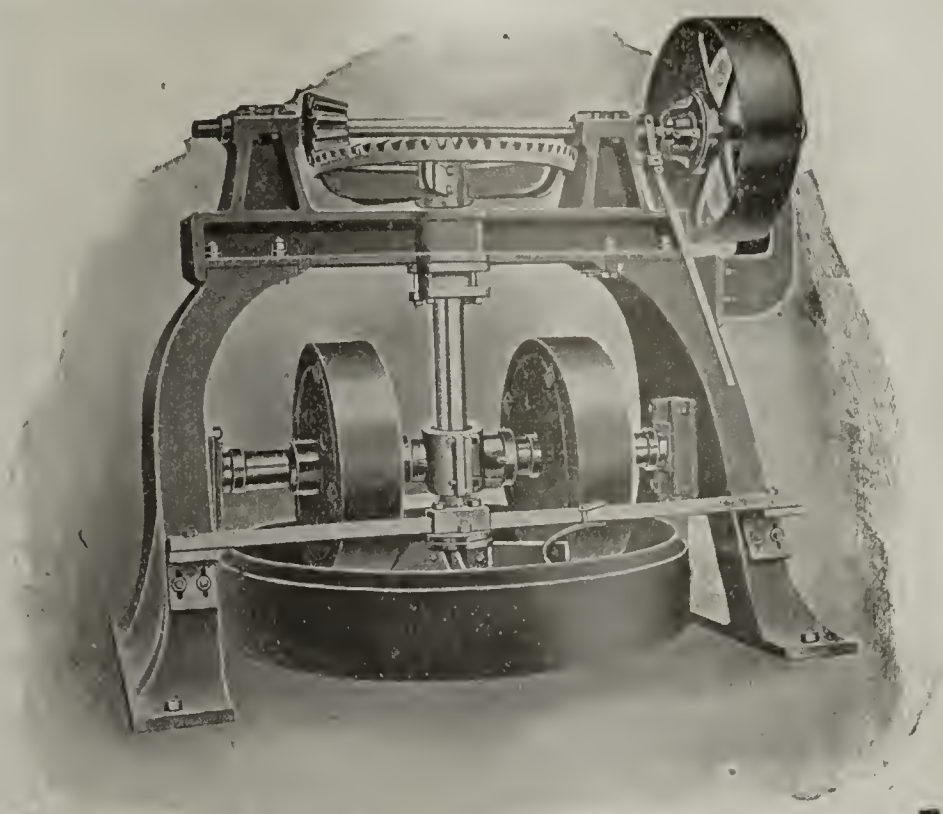
Saw Mills, Lath Mills, Edgers, Cut-Off Saws, Tanks, etc. Write for list.

Also full assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

The Randle Machinery Co.

1732 Powers Street **Cincinnati, Ohio**



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BUILDERS OF

Pittsburgh Standard Dry and Wet, Revolving and Stationary Grinding Pans for Brick, Cement, Sand, Terra Cotta and all kinds of Refractory Materials.

ROCK AND ORE CRUSHERS

When writing for prices state kind of material and capacity required.

Eastern Offices

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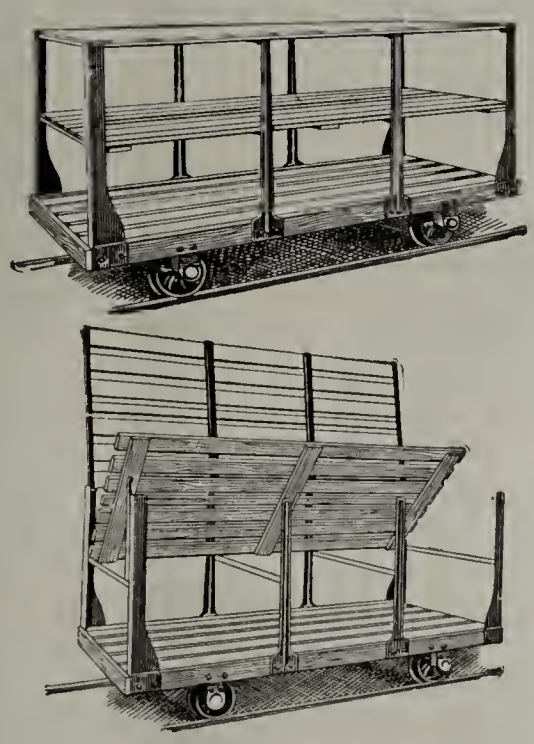
The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices



Vulcan Iron Works MASON CITY, IOWA

"A CHANGE IN FLUES MAKES THE DIFFERENCE IN DRYERS"

POTOMAC BRICK COMPANY

1413-G Street, N. W.

ELLIOTT S. MORSE, Gen. Mgr.

Washington, D. C., March 19, 1909.

THE KING ENGINEERING CO.,
Richmond Va

Gentlemen:—Our No. 1 10-tunnel Sharer Radiated heat dryer before it was remodeled by you gave us an average of 55 cars per day of dry brick.

You completed the reconstruction of this dryer the latter part of January last. This day we have examined our records and find that our daily average now is 80 cars dry brick.

Yours very truly,

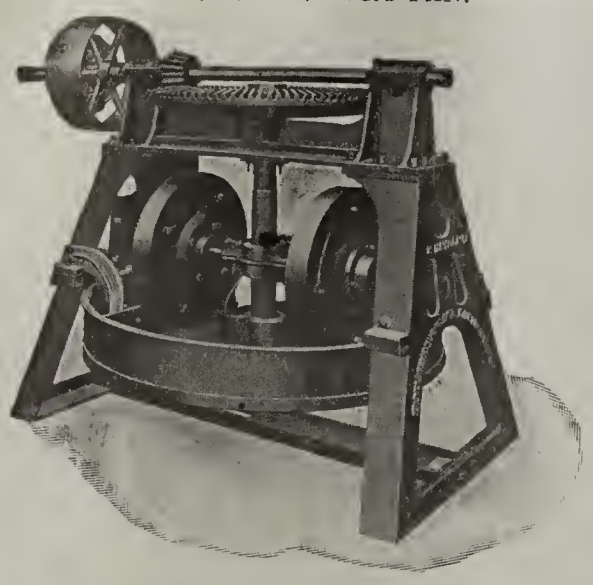
(Copy) ELLIOTT S. MORSE.

That which we have done for the above Company **we can do for You.** We can remodel **any** Radiated heat dryer **and increase its capacity** from 15 to 30 per cent.

THE KING ENGINEERING COMPANY

RICHMOND, VA.

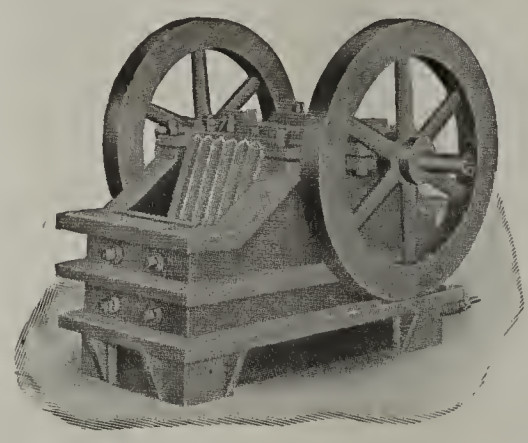
THE HAYDEN DRY PAN.



Masssive and well proportioned.
Best material.
Time tried and reliable.
Large capacity.
Acurate mechanism.
Independent or yoked mullers.

Send for specifications and prices before buying.

THE HAYDEN CLAY CRUSHER



This Crusher is specially designed and adapted for use as an auxiliary to the dry pan.
Capacity 10 to 30 tons per hour.
Simply constructed and the strongest machine of the kind on the market.

Send for circular and prices.

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BRICK TESTING RATTLER

For testing paving brick.
Built to the standard specifications of the N. B. M. A.
Best material and workmanship.

Send for descriptive matter.

The P. HAYDEN S. H. CO., Foundry and Machine Dept.

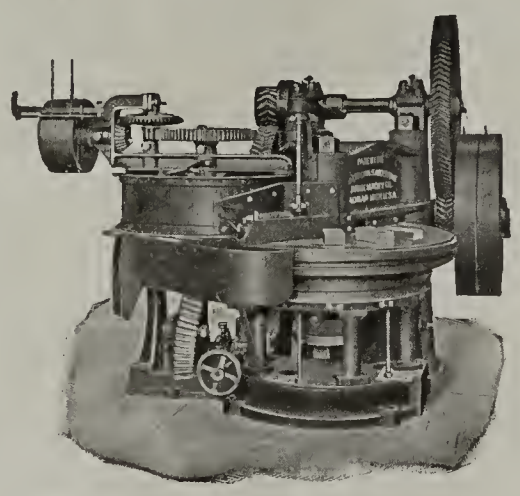
Manufacturers of

WET AND DRY PANS, CLAY CRUSHERS, STEAM CLAY PRESSES, RATTLERS, BRICK CARS, CARWHEELS, AXLES, KILN BANDS, etc.

112 West Broad Street **COLUMBUS, OHIO**

The American Sandstone Brick Machinery Co.

INCORPORATED APRIL, 1902
SAGINAW W. S., MICH.



Improved Saginaw Rotary Presses

Are now being built with extra table for making fancy brick, on which double pressure is exerted.

Don't confuse our Practical System with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant, starting and operating at our expense until at least 100,000 brick are made before asking for a settlement.

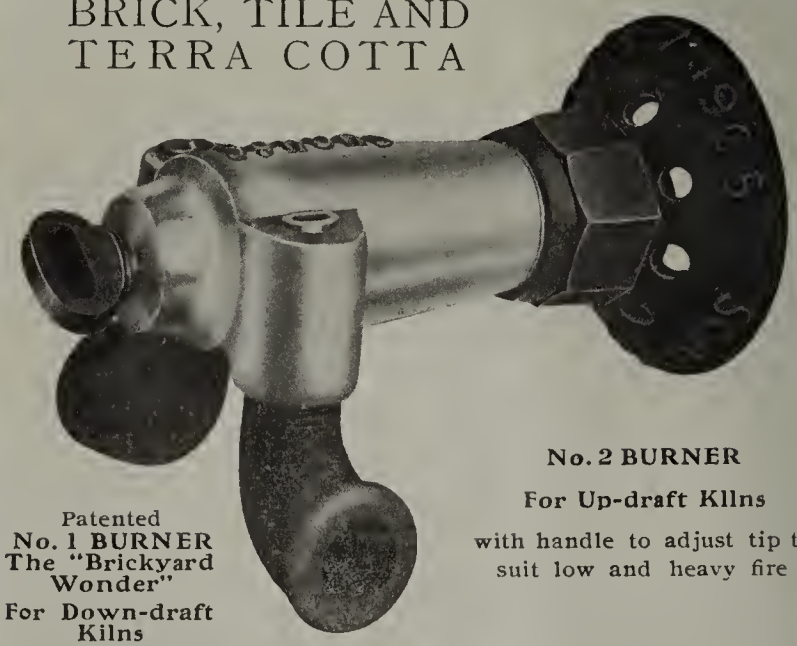
Our plants are **installed under the supervision of Practical Engineers who know how Sand-Lime Brick should be and can be made.** We have **Practical Plants Running Successfully** to show to prospective investors.

WE ARE NOT SCIENTISTS

We **Produce Results,** because we are the **Oldest Practical Sand-Lime Engineering Company Doing Business in the United States,** and we **defy contradiction.**

SCHURS Perfected Oil Burners

MOST ECONOMICAL BURNERS ON THE MARKET. DESIGNED ESPECIALLY FOR BURNING BRICK, TILE AND TERRA COTTA



ADJUSTABLE TIP

Patented
No. 1 BURNER
The "Brickyard Wonder"
For Down-draft Kilns

No. 2 BURNER
For Up-draft Kilns
with handle to adjust tip to suit low and heavy fire

Not an experiment, but a severely tested, well proved burner whose superiority to all others has been amply demonstrated.

Write for Booklet containing full information.

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DRY PAN

With Independent
and Suspended

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A well-tried and
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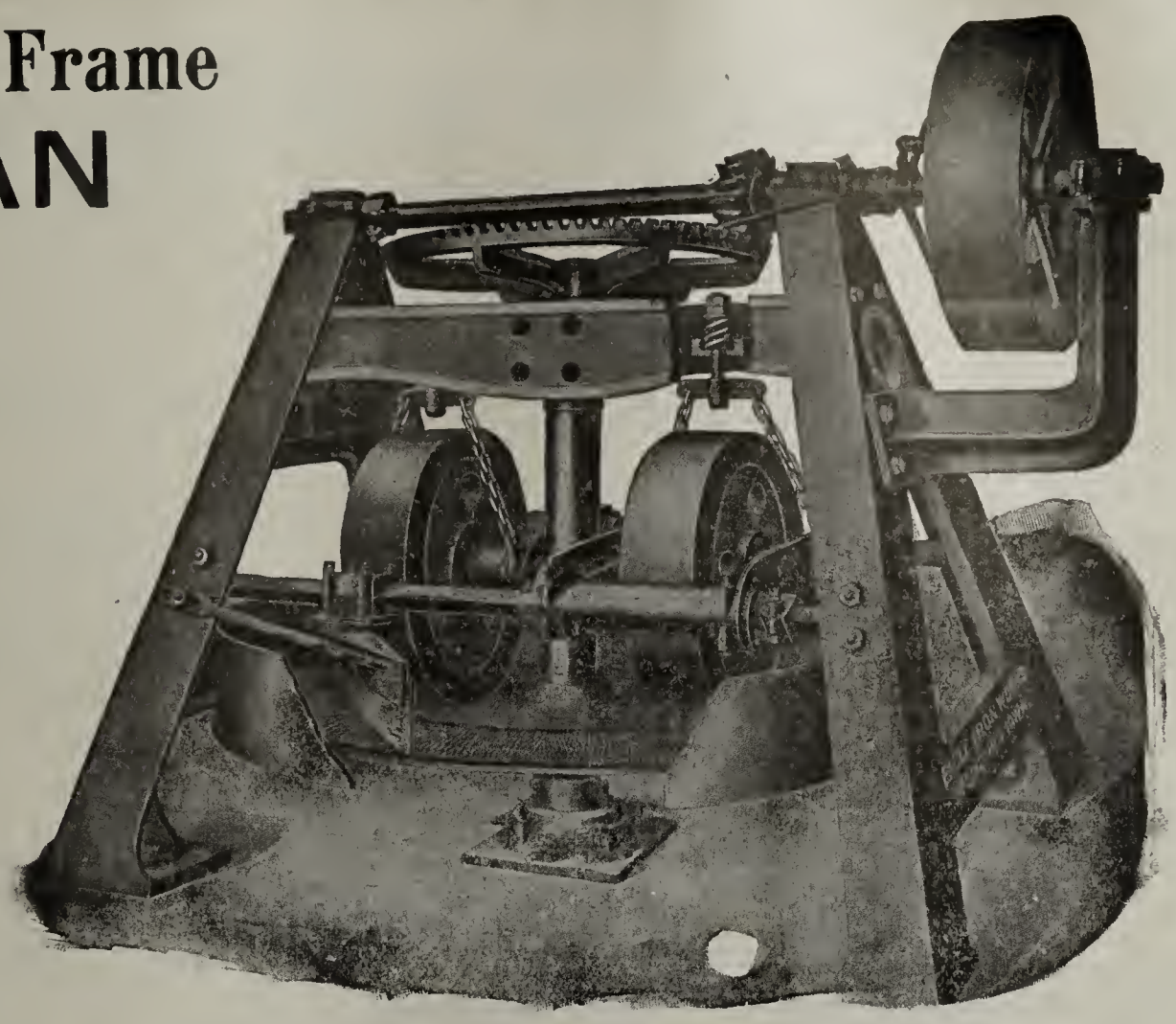

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Built Right,

Price Right,

Write Us

STYLE No. 4.

The only Steel Bench Pallet that can be stacked without slipping. They Interlock. Light, Strong, Rigid. (Patented.)

ALL STYLES

MADE EXCLUSIVELY BY

THE OHIO GALVANIZING & MANUFACTURING CO.

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Inventor of a New Process for Making "GRANITE BRICK"

My system enables the manufacturer to turn out a sand-lime brick of a compression strength of 9,000 pounds per square inch from proper raw materials. Send in a one-pound fair average sample of your sand and a one-pound sample of your lime for examination.

Porcelain Enamel for Clay Brick

Forward, express charges prepaid, ten brick for testing purposes.

Special Enamel for Sand-Lime Brick

Send in as many brick as colors wanted and specify colors desired.

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HANDLE YOUR CLAY WITH ONE MAN AND

The Thew Steam Shovels

Made in Four Sizes. Mounted on Car Wheels or Traction Wheels.

Type No. 0 Shovel—Ohio Brick Co., Toledo, O.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adjusted to cut to any desired level.

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Wire Cables used instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickyards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

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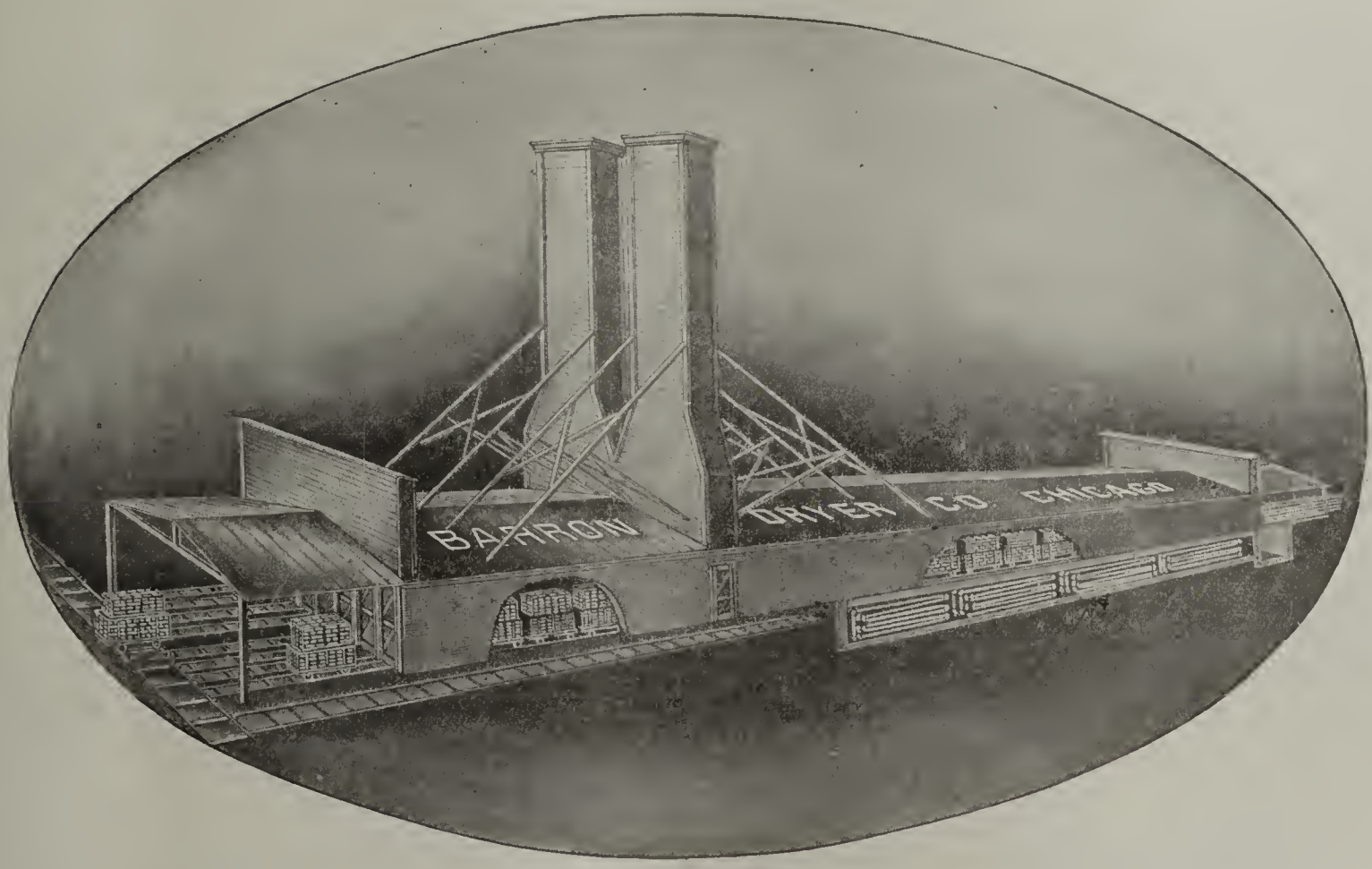
MANUFACTURERS, PATENTEES and BUILDERS of the

CHICAGO IRON CLAD DRYERS
BARRON'S TENDER CLAY DRYERS



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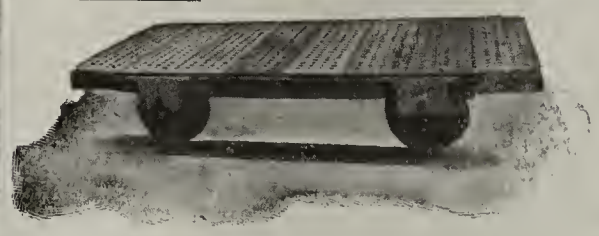
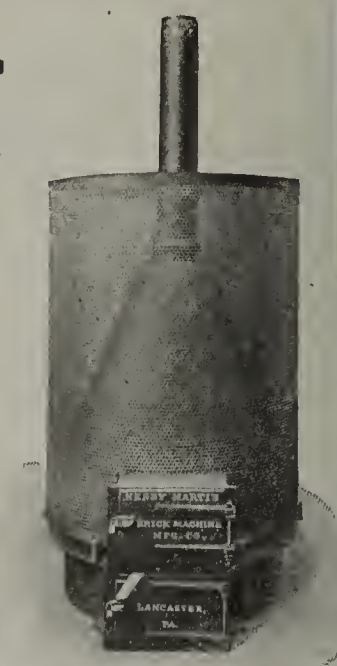
IS KNOWN THE WORLD OVER FOR

ITS SIMPLICITY DURABILITY AND COMPLETE SATISFACTION THROUGHOUT



DRYER CARS

TRUCKS



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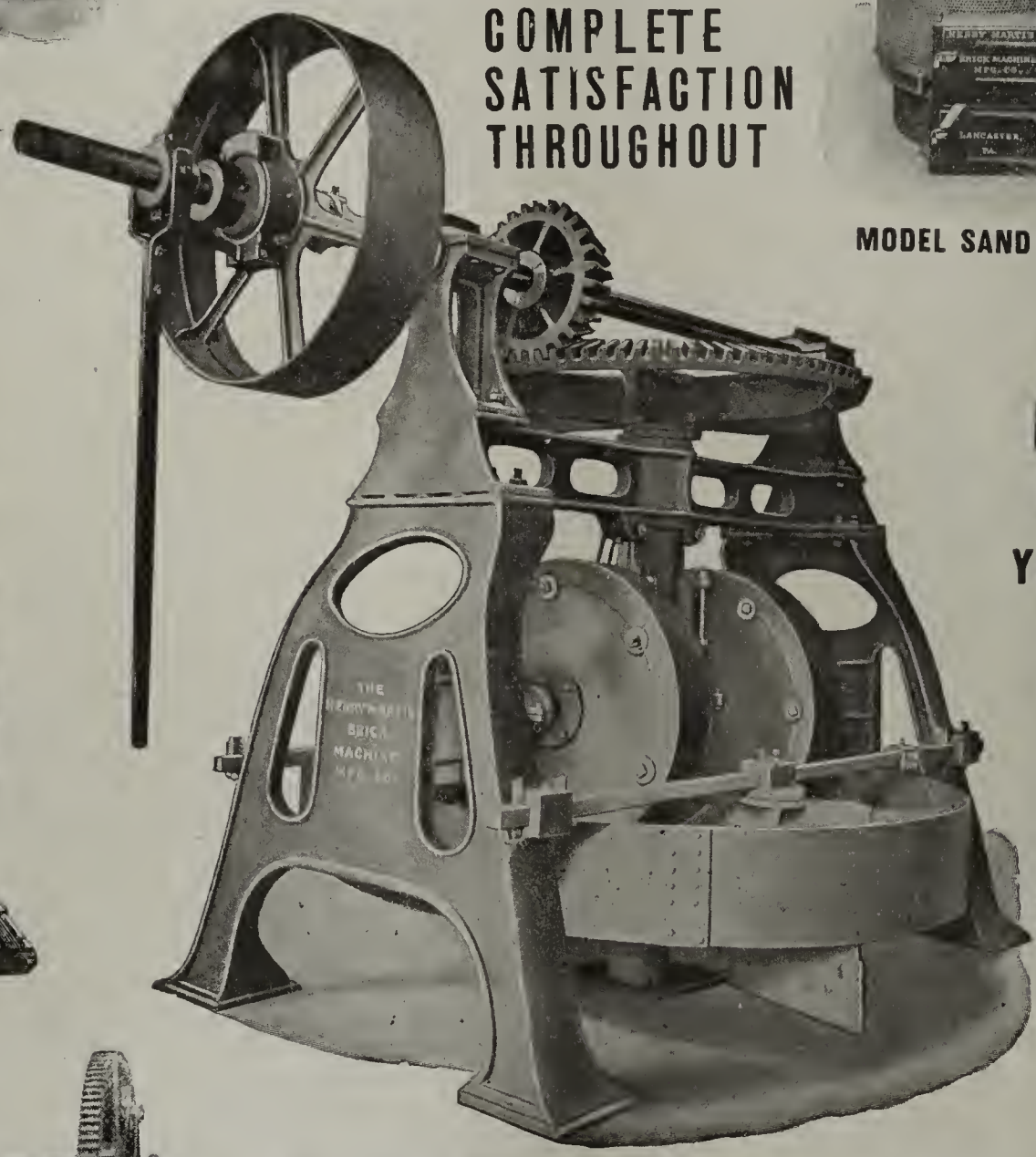
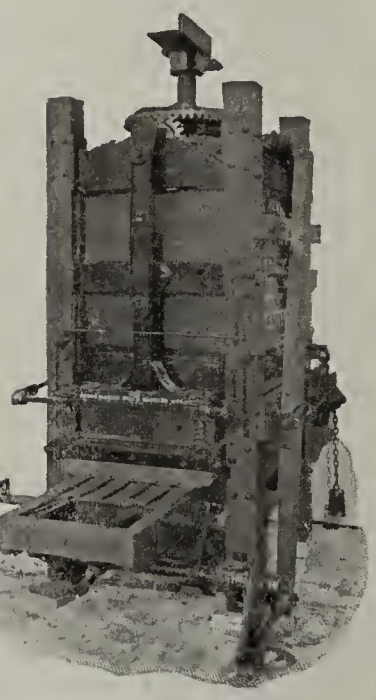
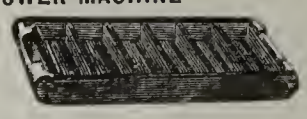
WE GUARANTEE OUR MACHINERY



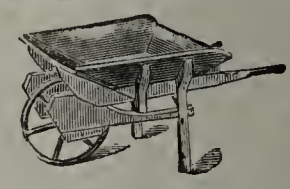


HORSE POWER MACHINE



BRICK MOULDS THAT ARE BUILT FOR HARD USAGE IS THE "MARTIN." TRY A SET

YARD SUPPLIES



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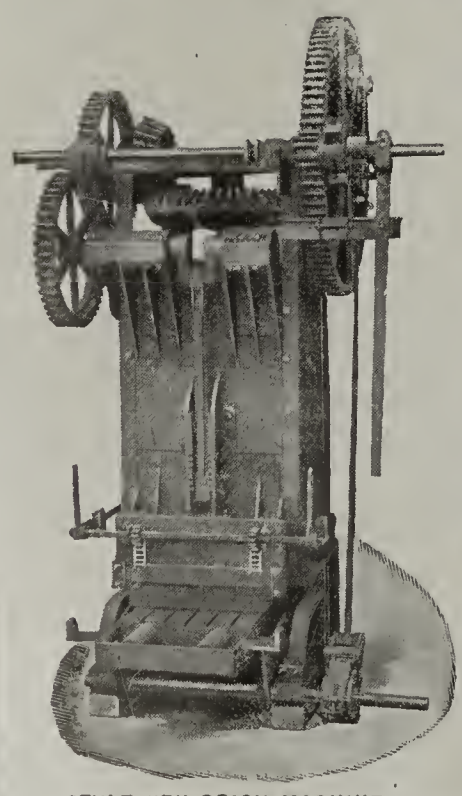
WE BUILD DRY OR WET PANS 5-7 OR 9-FT. WRITE US.



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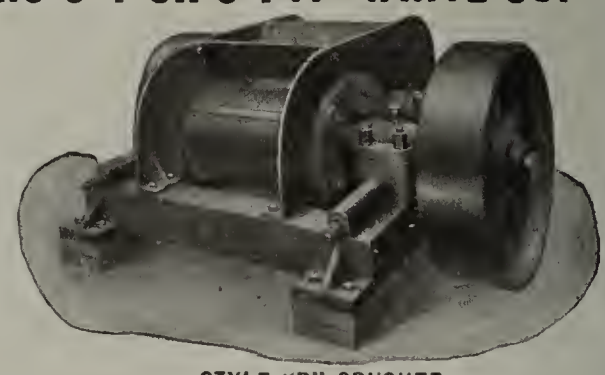
"WE FURNISH EVERYTHING THE BRICK-MAKER NEEDS"



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MARTIN

CLAY-WORKING ENGINEERS & MACHINERY EXPERTS

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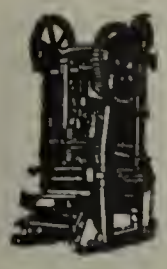

THE "MARTIN" STEAM BRICK "DRYING SYSTEM"

PATENTED February, 22d, 1898, No. 599509
October 10, 1905. No. 95520
November 14, 1905, No. 804489
May 26, 1908. No. 888831

This Dryer, and the design in arranging it, are under the protection of the United States Government by virtue of patents granted. Patents have also been taken out in all the principal foreign countries. We are the sole owners and control these important patents and have authorized NO ONE to manufacture or sell the "MARTIN"

RACK PIPE STEAM BRICK DRYERS

☞ YOUR BRICK DRY OVER NIGHT ☜

☞ LABOR SAVING THROUGHOUT ☜

From "Martin Patent System" Brick Dryer to Kilns

ADAPTED FOR SOFT-MUD OR STIFF-MUD BRICK

SUPERIOR IN EVERY RESPECT TO ANY OTHER SYSTEM—Labor Saving Throughout. Dispenses with Truckers and car Pushers. Pallets Automatically Return to Brick Machine. Quick to install and low in price, and takes up very little Yard room.

The sale and construction of the "Martin" Rack Pipe Steam Brick Dryer is under the direct supervision of the Factory Office at Lancaster, Pa.

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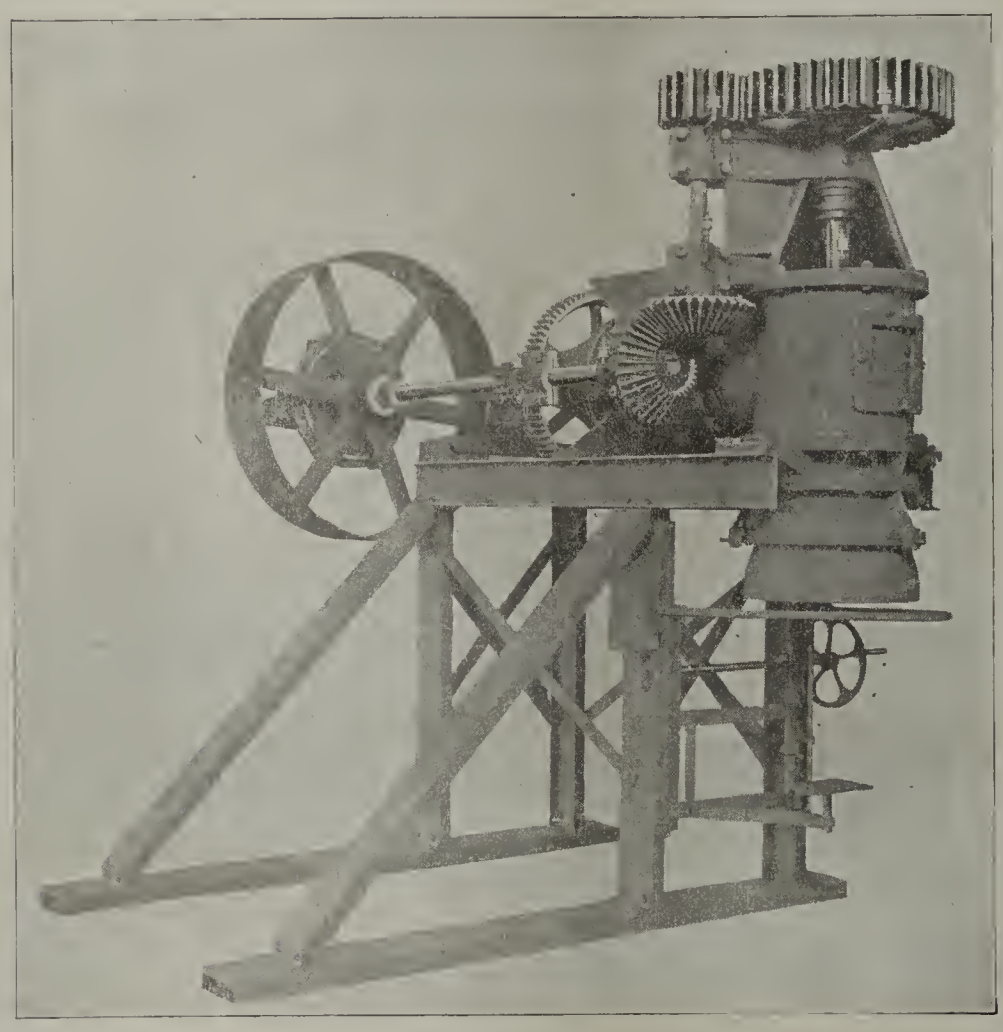
The Big Profits are in the Big Tile



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is the machine you need to keep you in the race.

Tile from 8 inches to 30 inches in Diameter, with dies for the different sizes readily and quickly interchangeable.

Weight of Mill, 8,000 lbs.

Can be furnished without supporting structure for mounting on wooden framework or second-story floor, or will be provided with structural steel supports, easily erected.

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The Only Mill for Successfully Making Tile from 3-inch to 24-inch Diameter

Greatly Improved in Strength and Convenience

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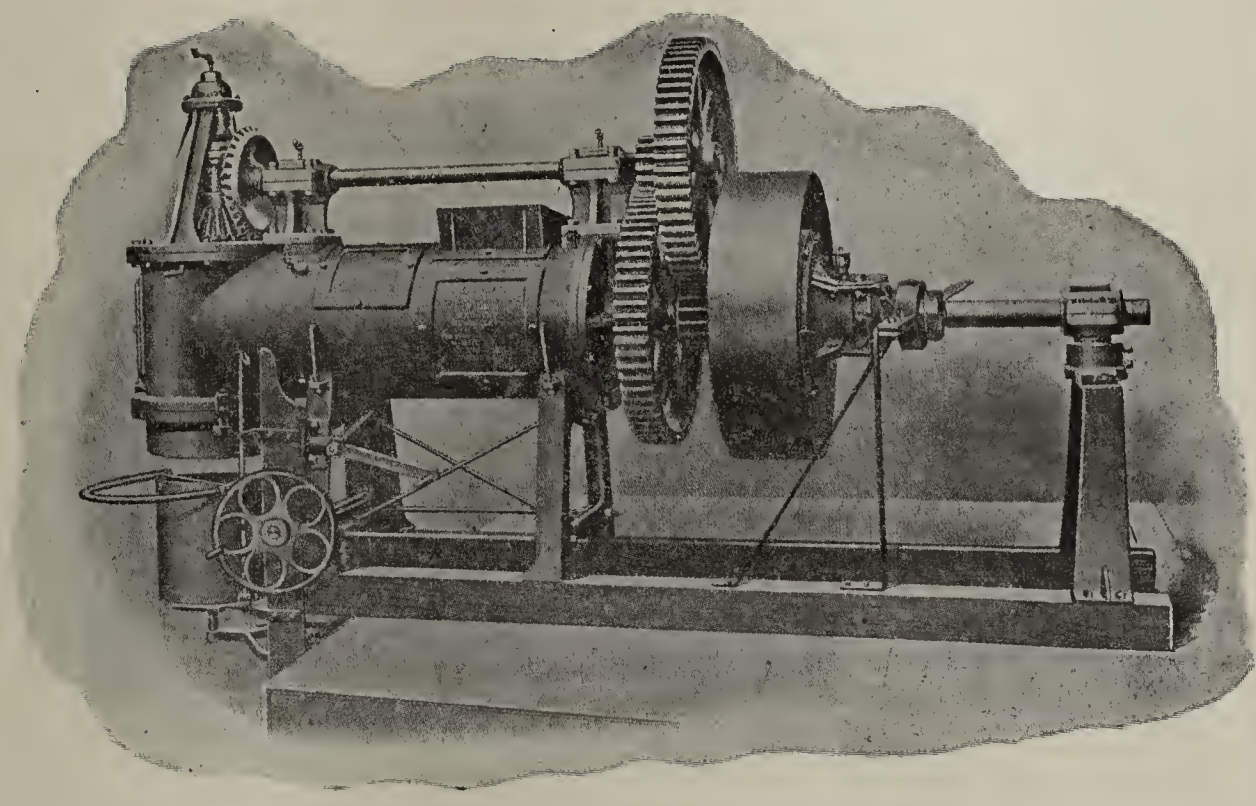
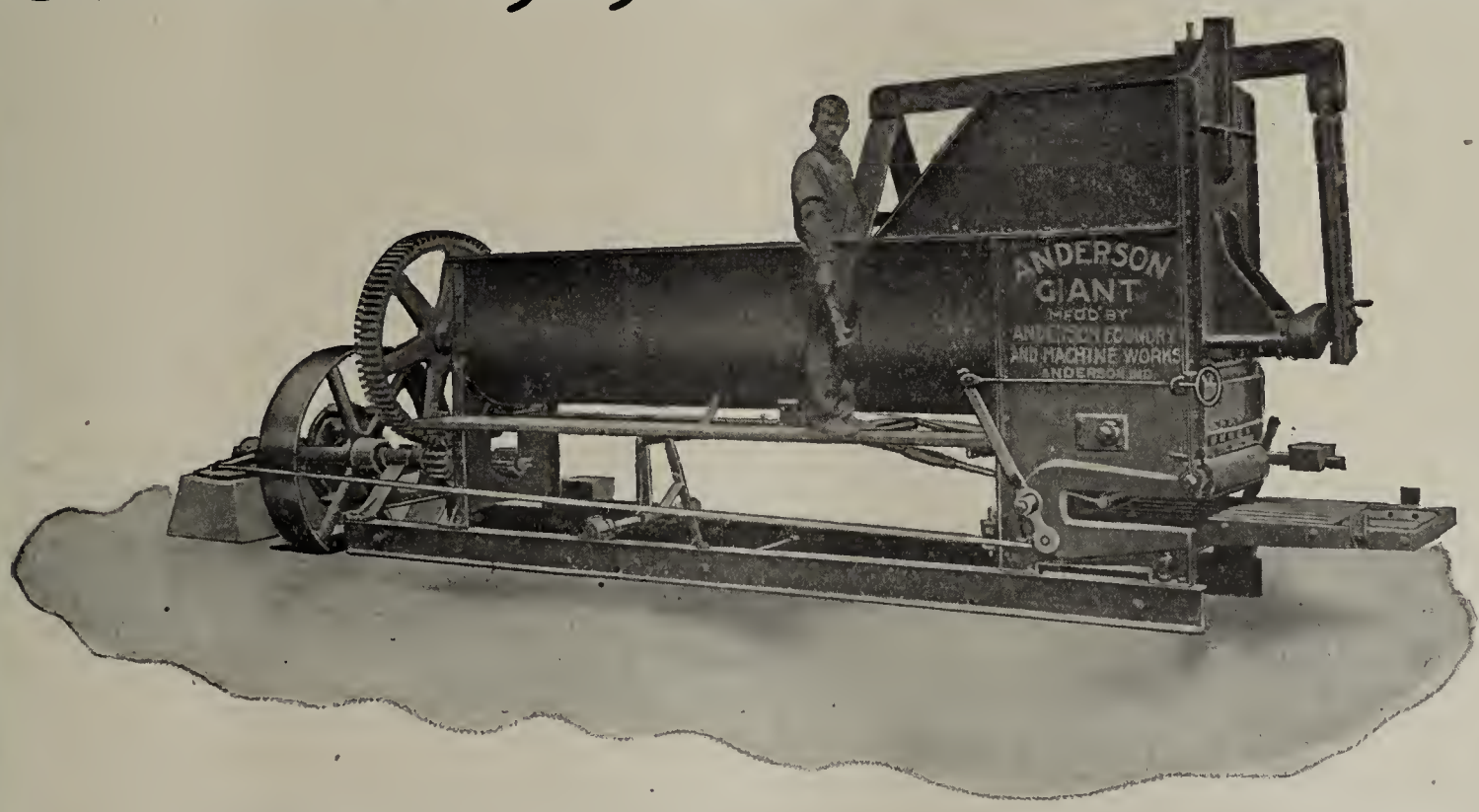


Our New 1909 Model Anderson Giant



We also Manufacture a Complete Line of

Dry Press Brick Machinery and Brick Yard Supplies

Write us your needs and let us figure with you.

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Southwestern Office, Wilson Building, Dallas, Texas.

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No. 217-E
Electric Side Dump Car.

No. 145
Ball Bearing Turntable. Made in sizes from 4 ft. to 11 ft. in diameter.

No. 161-A
Gable Bottom Dump Car, with trip and brake.

CARS FOR BRICK YARDS, CEMENT WORKS, CONCRETE BLOCK MANUFACTURERS, STONE QUARRIES, ETC.

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Either Side Rocker Dump Car.

TURNTABLES, TRANSFER CARS, DRYER CARS, TRACK, SWITCHES, BRICK PALLETS.

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Heavy Double Deck Car
Patent Malleable Iron Uprights.

NO. 142
Transfer Car.

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Double Deck Car.

NO. 277
Steel Mine and Quarry Car.

The Atlas Car and Mfg. Co.
CLEVELAND, OHIO

UNIVERSITY

VOL. 35 No. 10

CLAY RECORD

A JOURNAL DEVOTED TO THE DISSEMINATION OF ALL MATTERS PERTAINING TO THE CLAY INDUSTRY

November 30, 1909

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You will buy it in the End

Why not

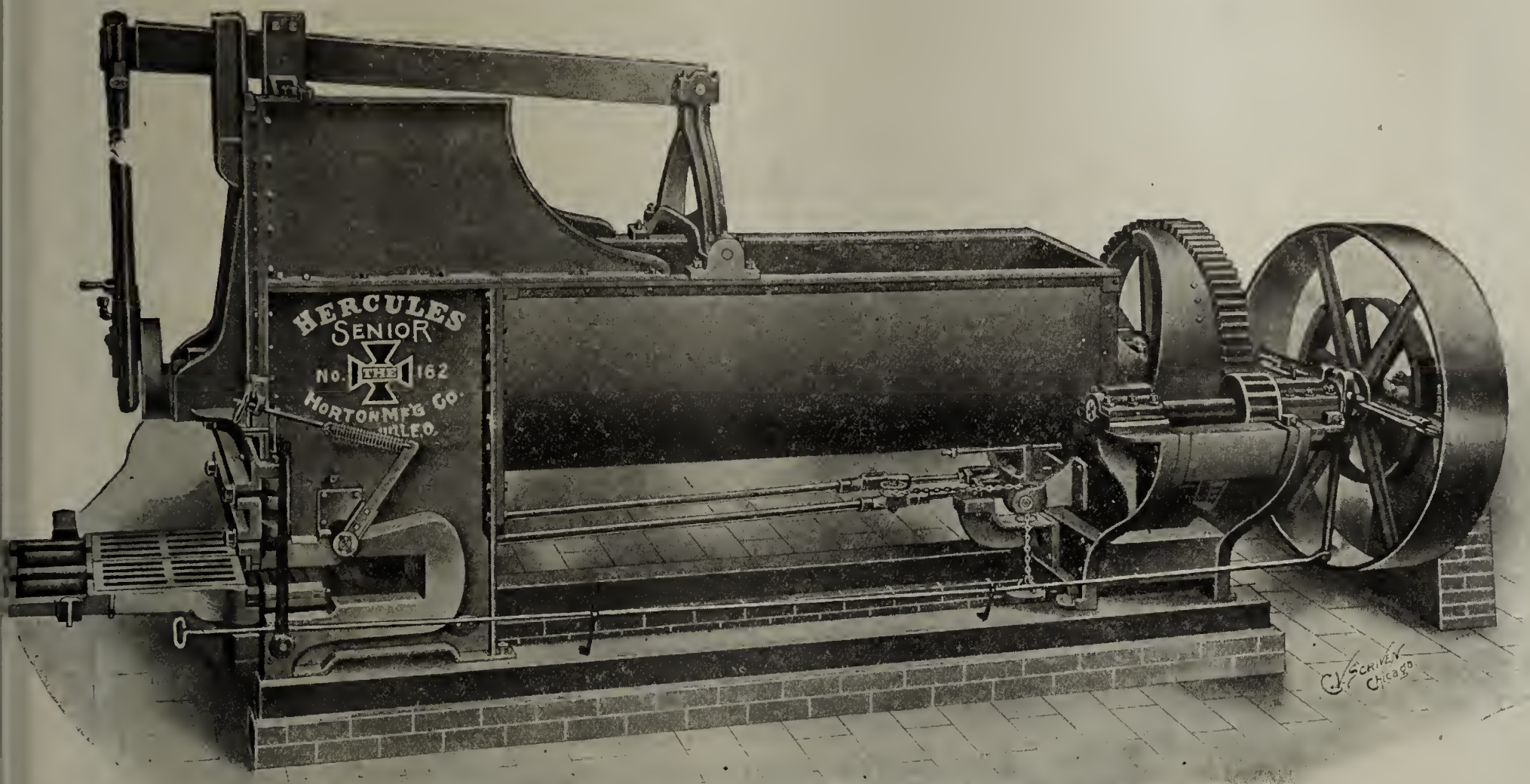
in the Beginning

The C. W. RAYMOND CO.

Clay Working Machinery

DAYTON OHIO U.S.A.

The Raymond-Horton



The unification of the Raymond-Horton Soft Mud lines brings into being the magnificent results of the best thoughts on the subject. With all experiments made and every machine, with its efficiency demonstrated beyond the point where there is not the faintest shadow of a doubt as to its practicability.

The purchase is complete—every brick machine, sander, pug mill, disintegrator and all appurtenances will be manufactured at Dayton, Ohio.

New parts which may be from time to time required, will be supplied by us.

We are now ready to fill your orders for any of the Raymond-Horton line.

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Silicate Brick Made by the "Division Method" Patented

THE PHILADELPHIA OPERA HOUSE

Built by Oscar Hammerstein and called the finest Opera House in the World. This beautiful building is faced with over 500,000 of our WHIE SILICATE BRICK, made under our patented process. These bricks were also used to line the wall at back of stage and also for the stairways.

The building seats 4,100 people and measures 240 feet on Broad Street and 160 feet on Poplar Street.

How would you like to make Brick suitable for Facing Buildings like this and do it cheaper than common brick can be made in any other way out of sand and lime?

We challenge any one to make as good a brick as we do by our process, and will allow him twice our cost.

The factory we built last year at Washington, D. C., is pronounced the most compact and cleanest known, and the product the finest brick produced.

WE CAN DO AS WELL FOR YOU. ASK US ABOUT IT AND LET US SHOW YOU

International Sand-Lime Brick & Machinery Company

Engineers and Contractors for Silicate Brick Factories

90 WEST STREET, NEW YORK, N. Y.

The Andrus Brick Press Makes Brick Every Day

Been doing it 20 years.

Strong Simple and Capable.

24 in operation in St. Louis District.

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1815 THIRD NATIONAL BANK BUILDING

ST. LOUIS ~ ~ MISSOURI

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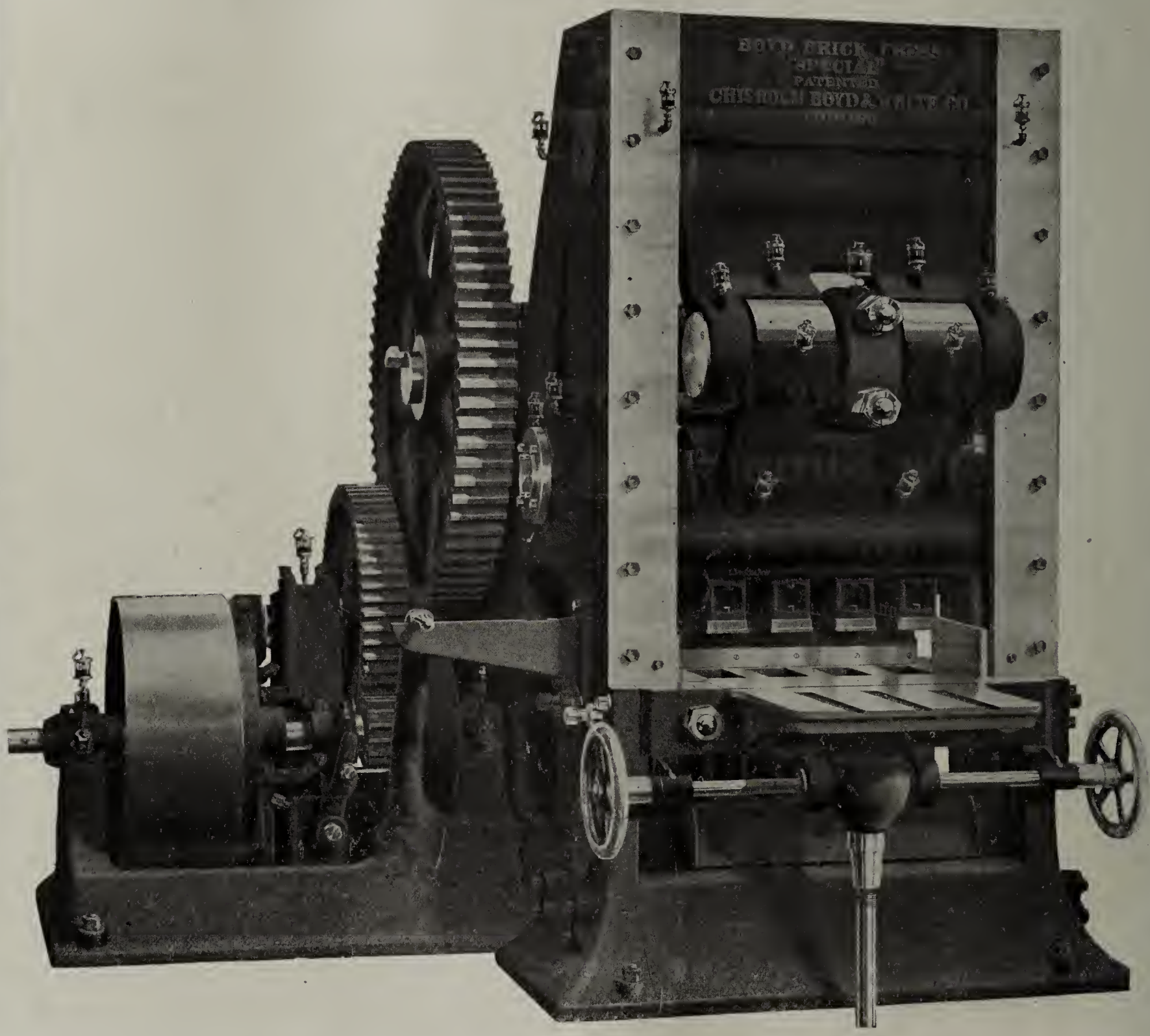
Built in Two, Four and Six-Mold Sizes



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BRICK PLANTS designed and complete machinery equipment furnished. More Boyd Presses in use than all other Press Brick Machines combined.

The Boyd Press has great strength and endurance, great pressure and long dwell. Boyd Presses built 20 years ago are still in use and doing good work. Brick Presses that last are the cheapest in the end.

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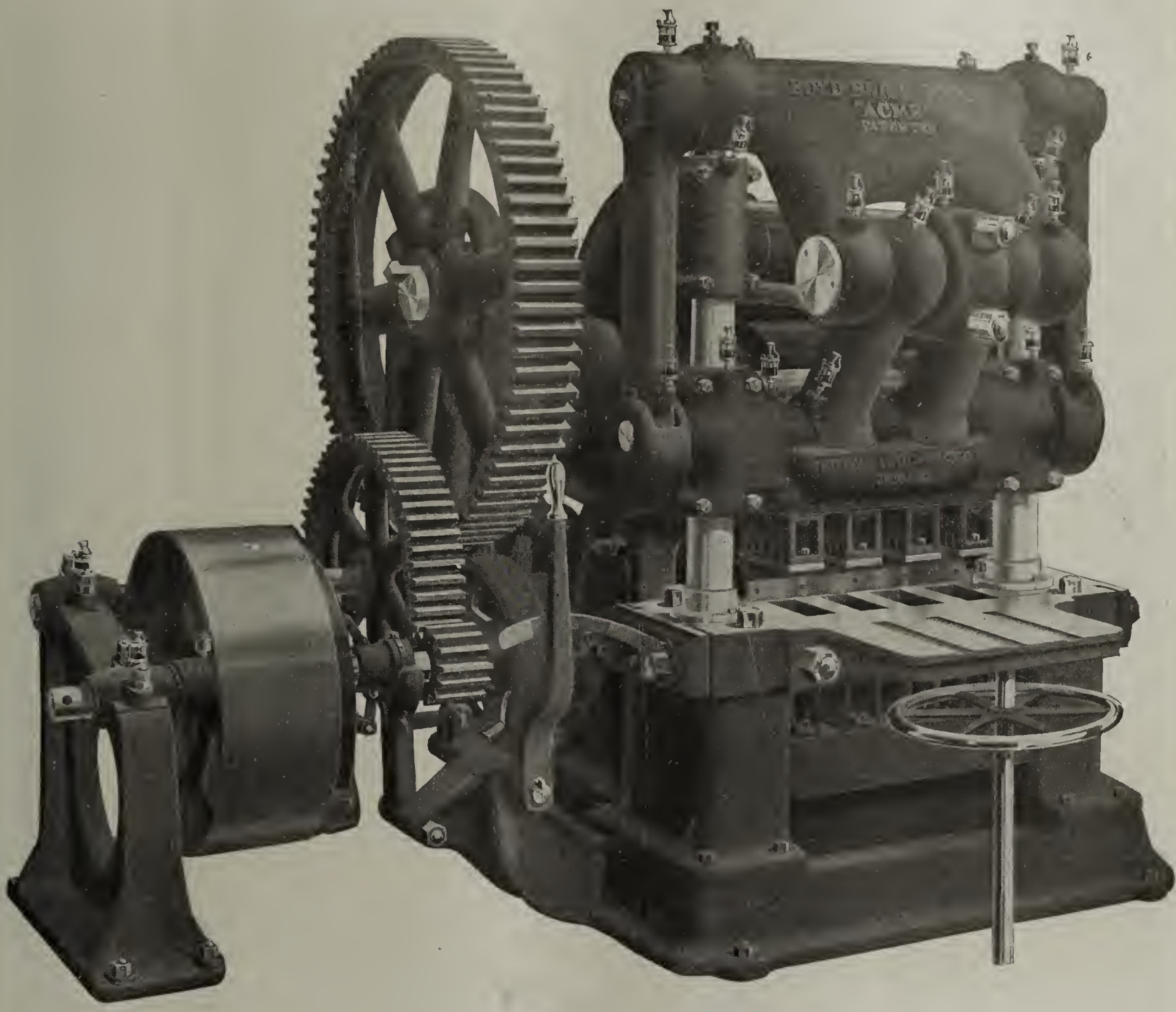
Built in Two and Four-Mold Sizes



FOUR-MOLD "ACME"

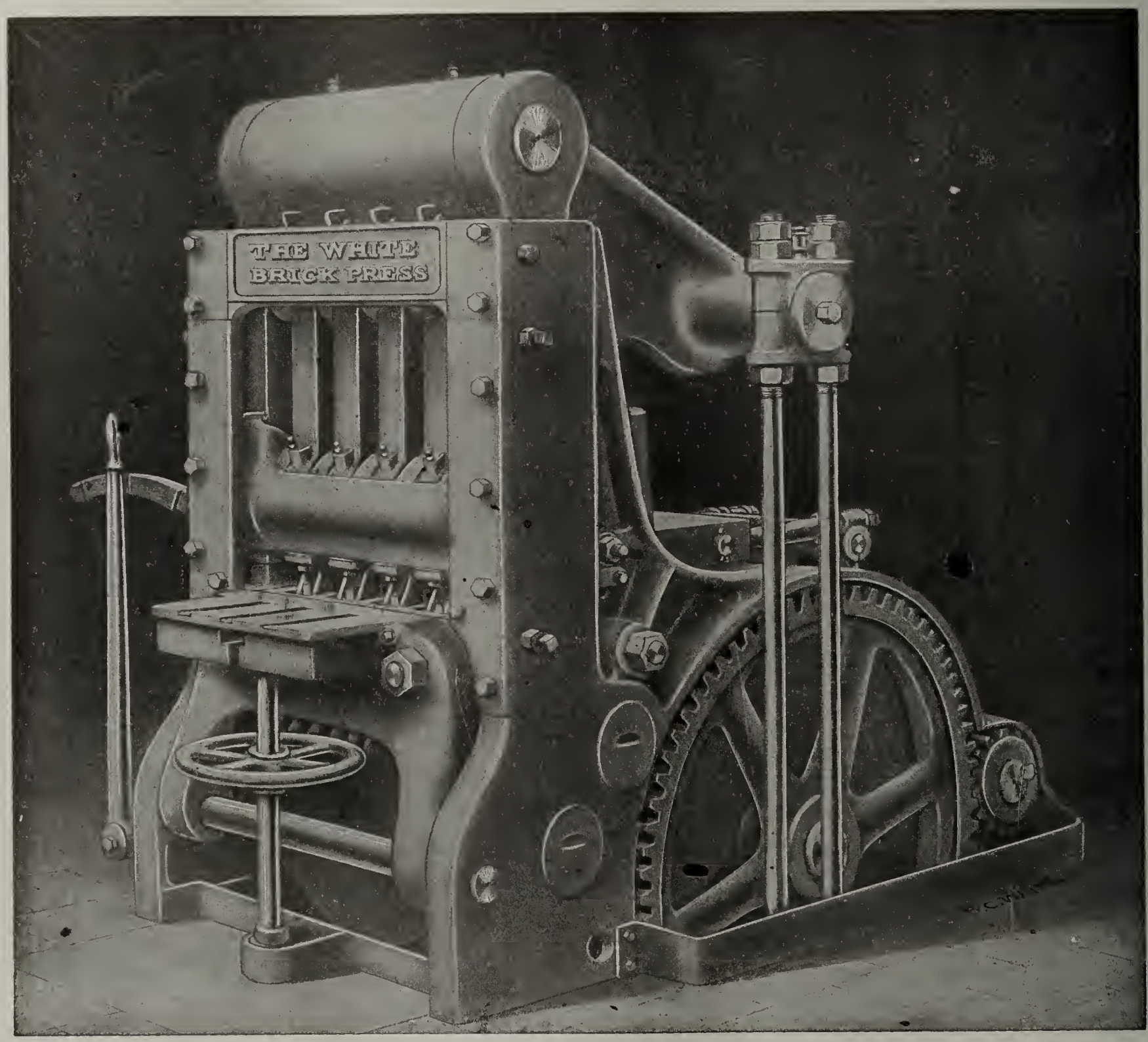
Detailed perfection, strength, endurance and quality of product have made the Boyd, the Brick Press by which all others are judged.

Write for catalogue No. 20 containing suggestions concerning the equipment of brick plants with complete plans.

CHISHOLM, BOYD & WHITE CO.

Office and Works: 57th and WALLACE STREETS CHICAGO, ILLINOIS

ALWAYS ON THE JOB
THE WHITE BRICK PRESS



When You Learn of a Breakdown on the Yard, You may be sure it is NOT the PRESS, if it is a WHITE

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CHICAGO BRICK MACHINERY CO.

1308 GREAT NORTHERN BUILDING, CHICAGO

The Fernholtz Brick Machinery Co.

MANUFACTURERS OF

DRY PRESSES, PULVERIZERS, MIXERS, ETC.

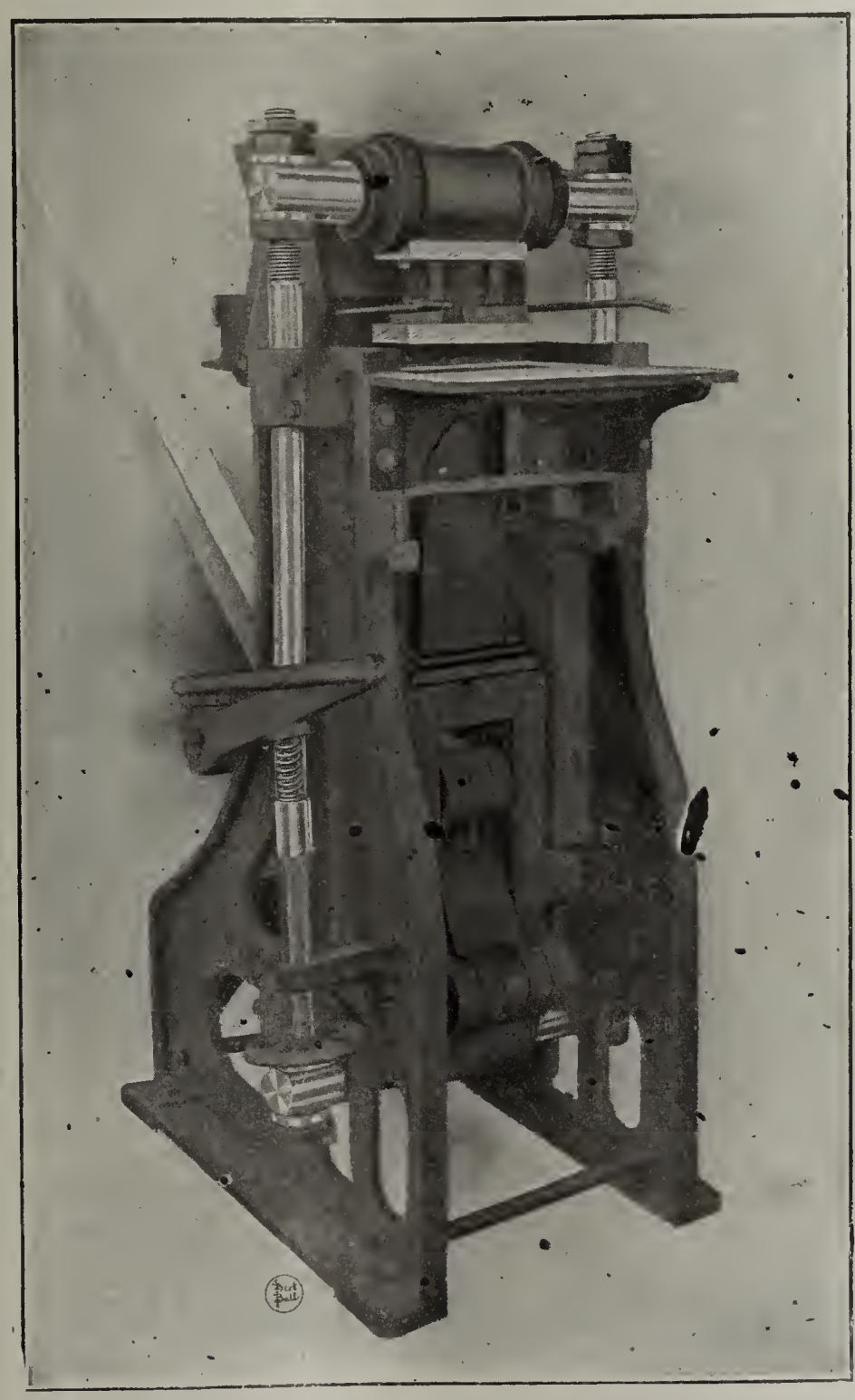
FOR

CLAY

AND

SHALE

BRICKS



FOR

CEMENT

AND

SAND-

LIME

BRICKS

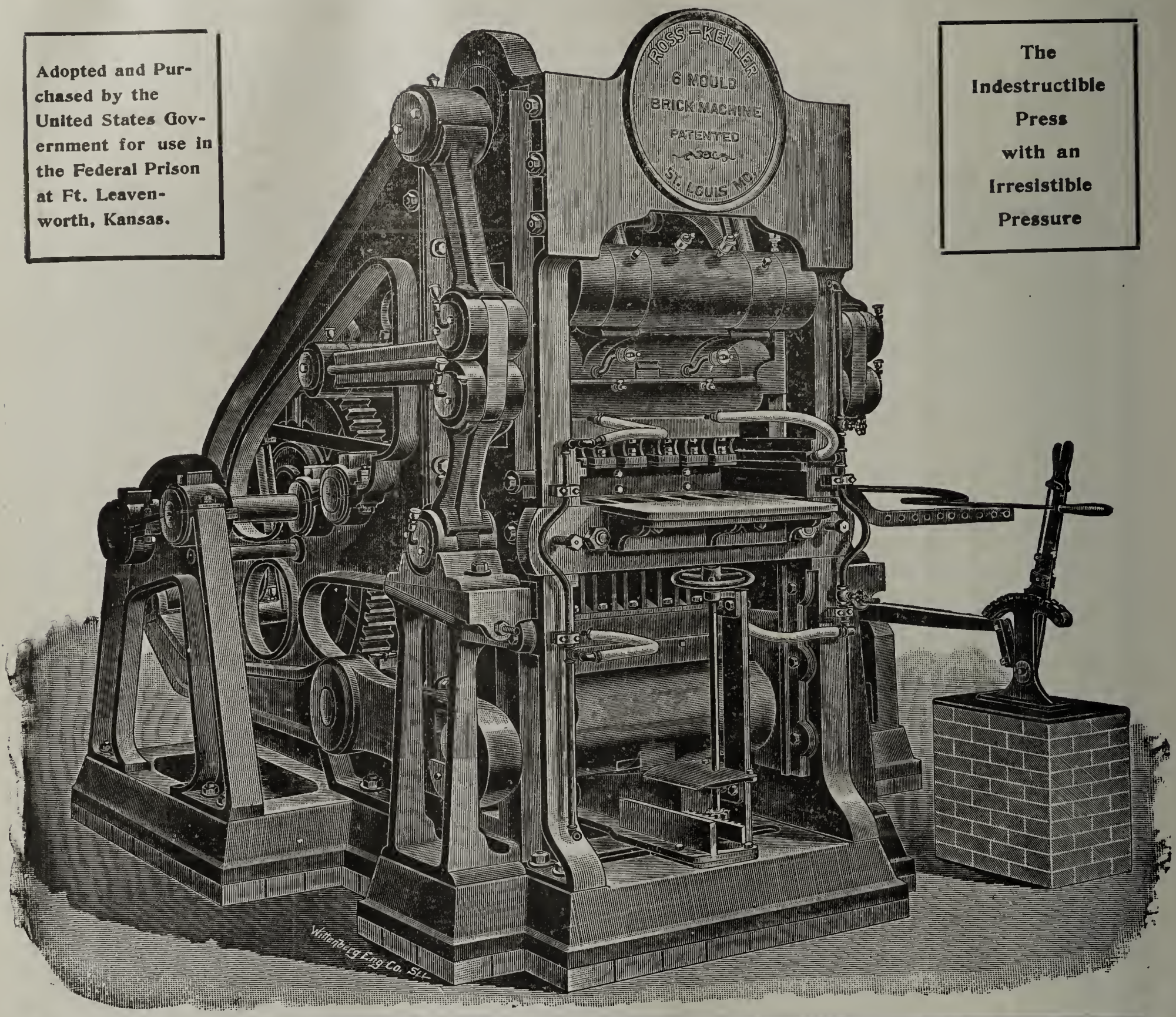
This Hand Press makes Brick equal in density to those made on a power press. Every Brick *PERFECT*. Extensively used for ornamental and special design.

The Fernholtz Brick Machinery Co.

BOYLE AND OLD MENCHESTER, ST. LOUIS, MO.

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.

The Indestructible Press with an Irresistible Pressure



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Sand-Lime Brick Plants, Shale and Clay Brick Plants

ARE ALSO SOLE MANUFACTURERS OF THE

Ross-Keller Triple Pressure Brick Press

The strongest and most efficient Brick Machine made, and the only Press that gives three distinct pressures to the brick

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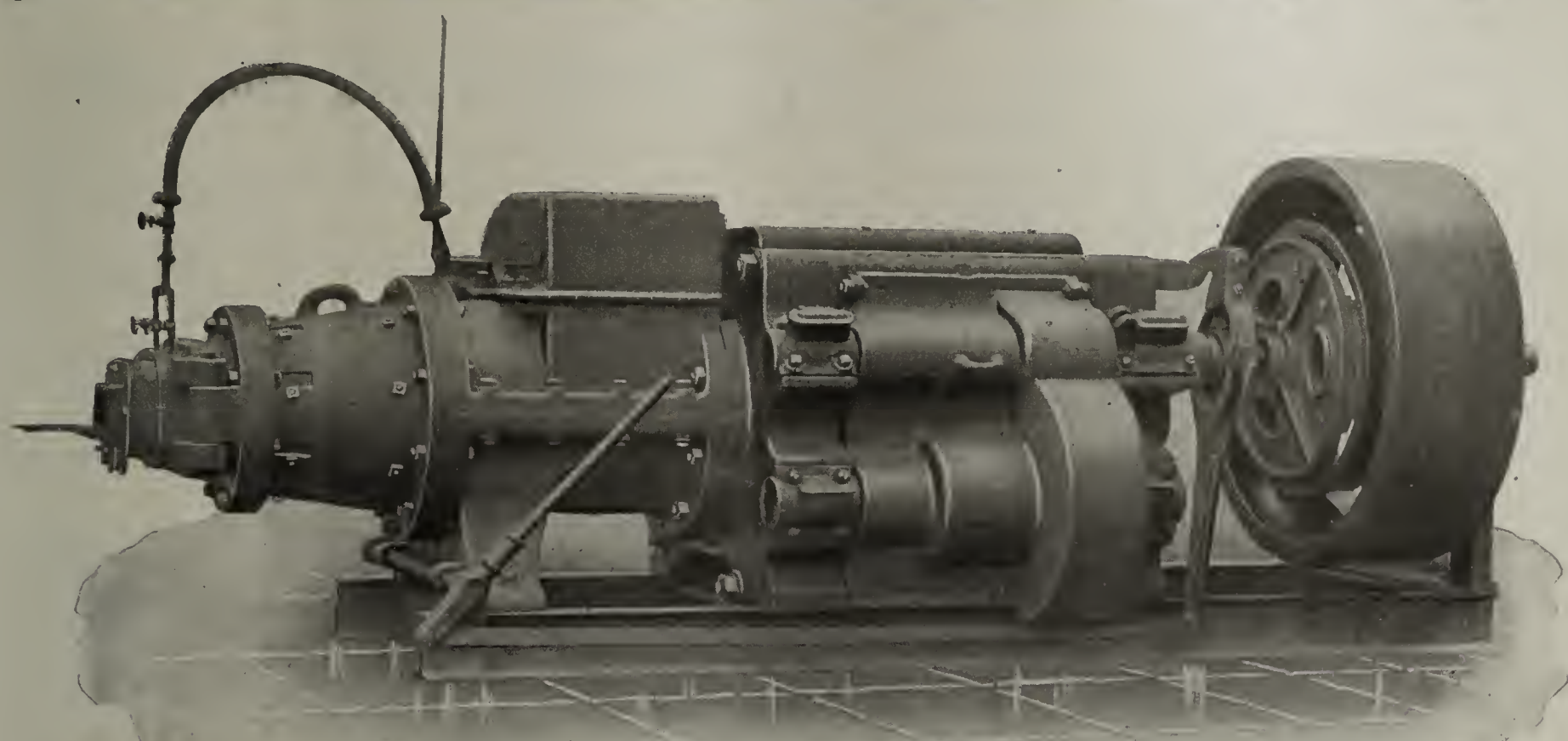

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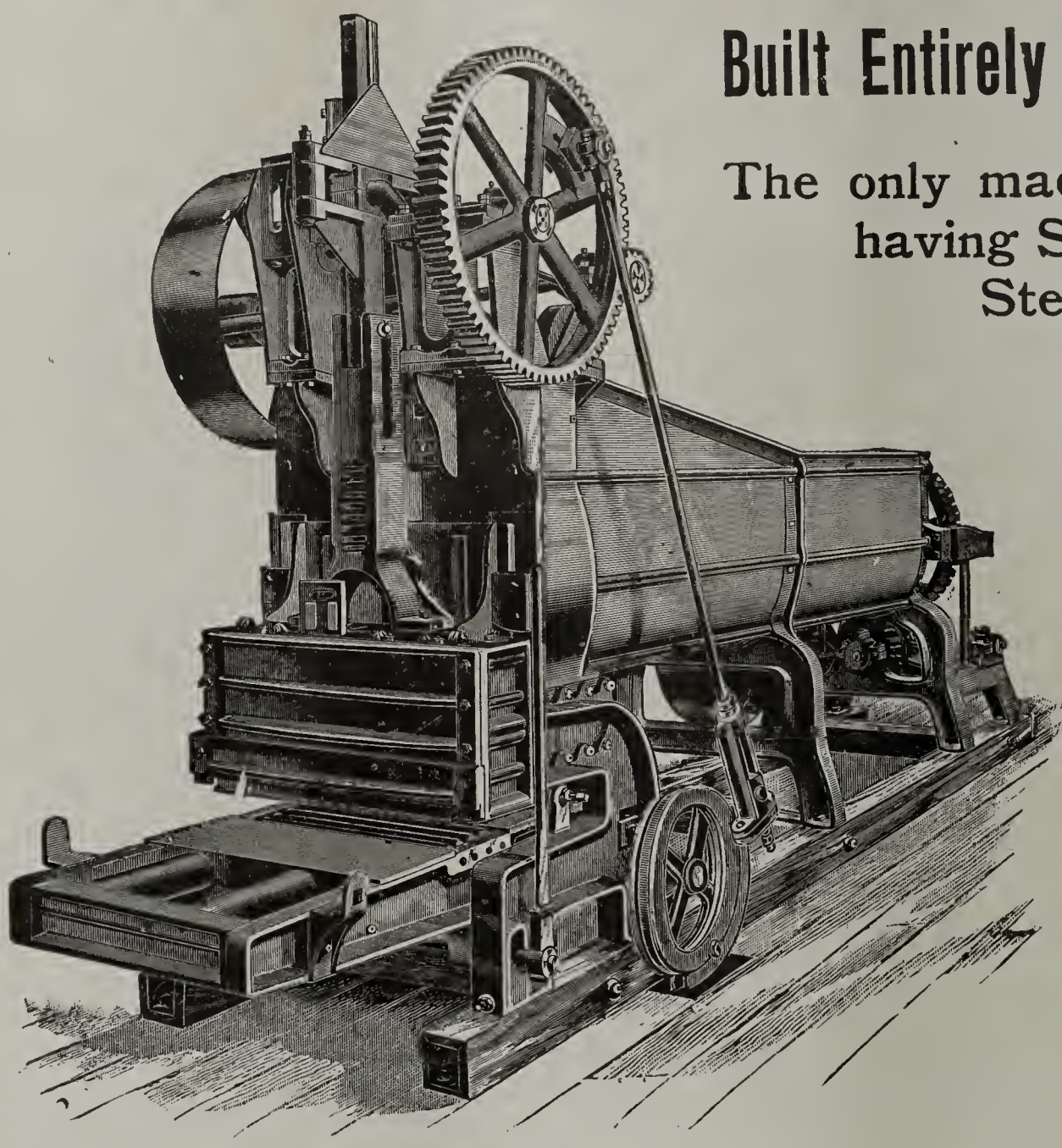

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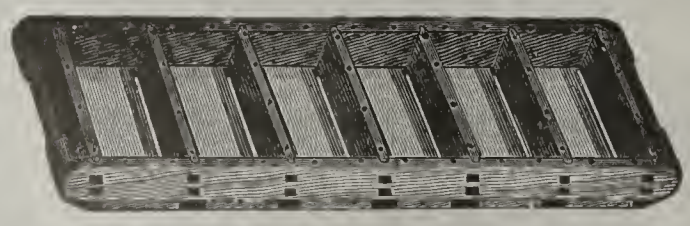

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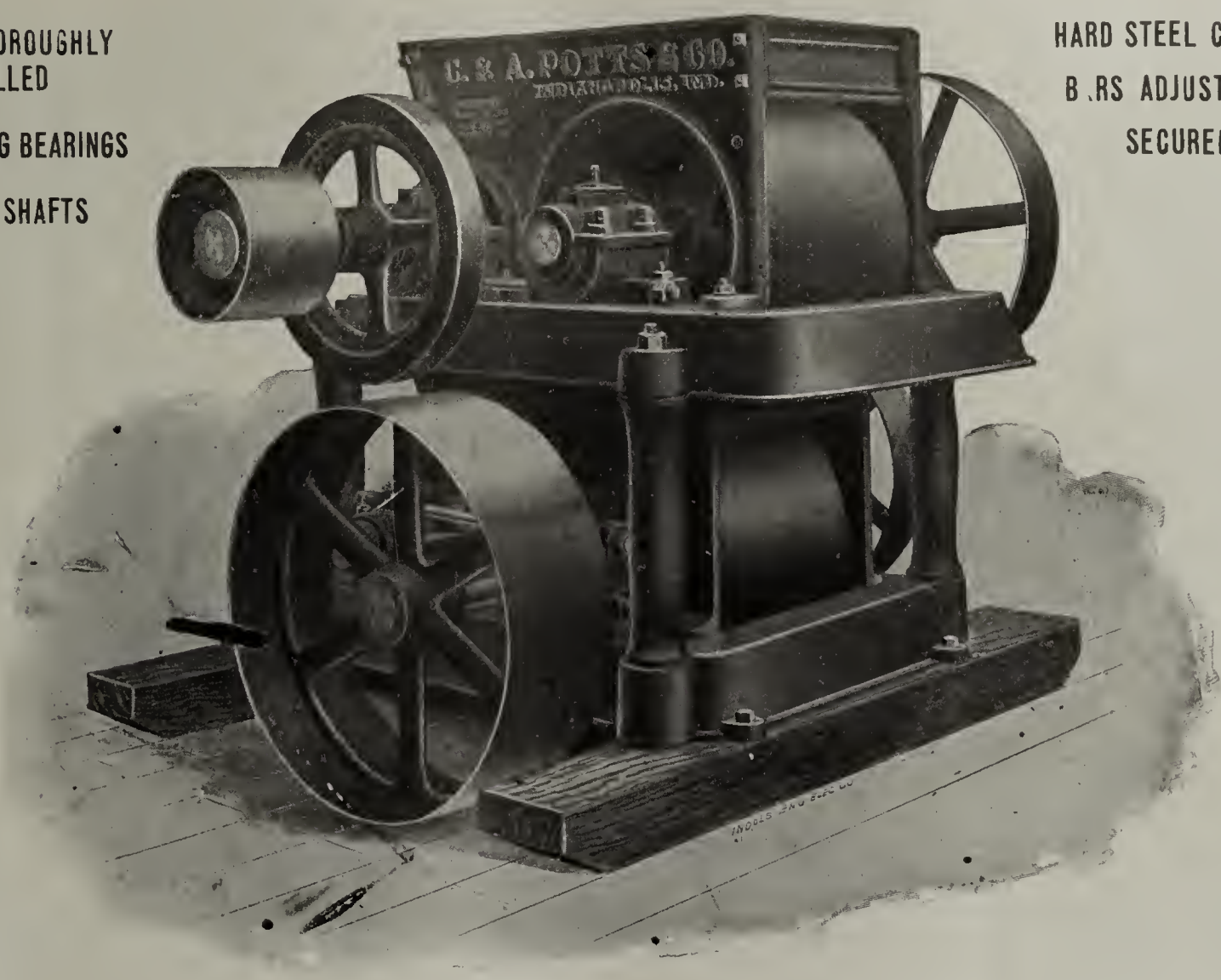

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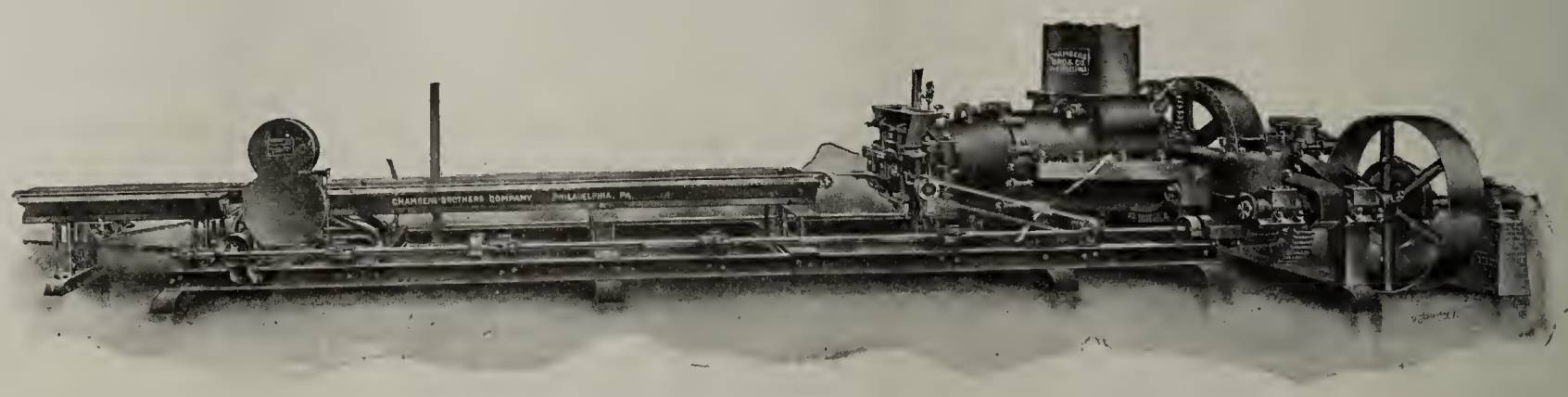

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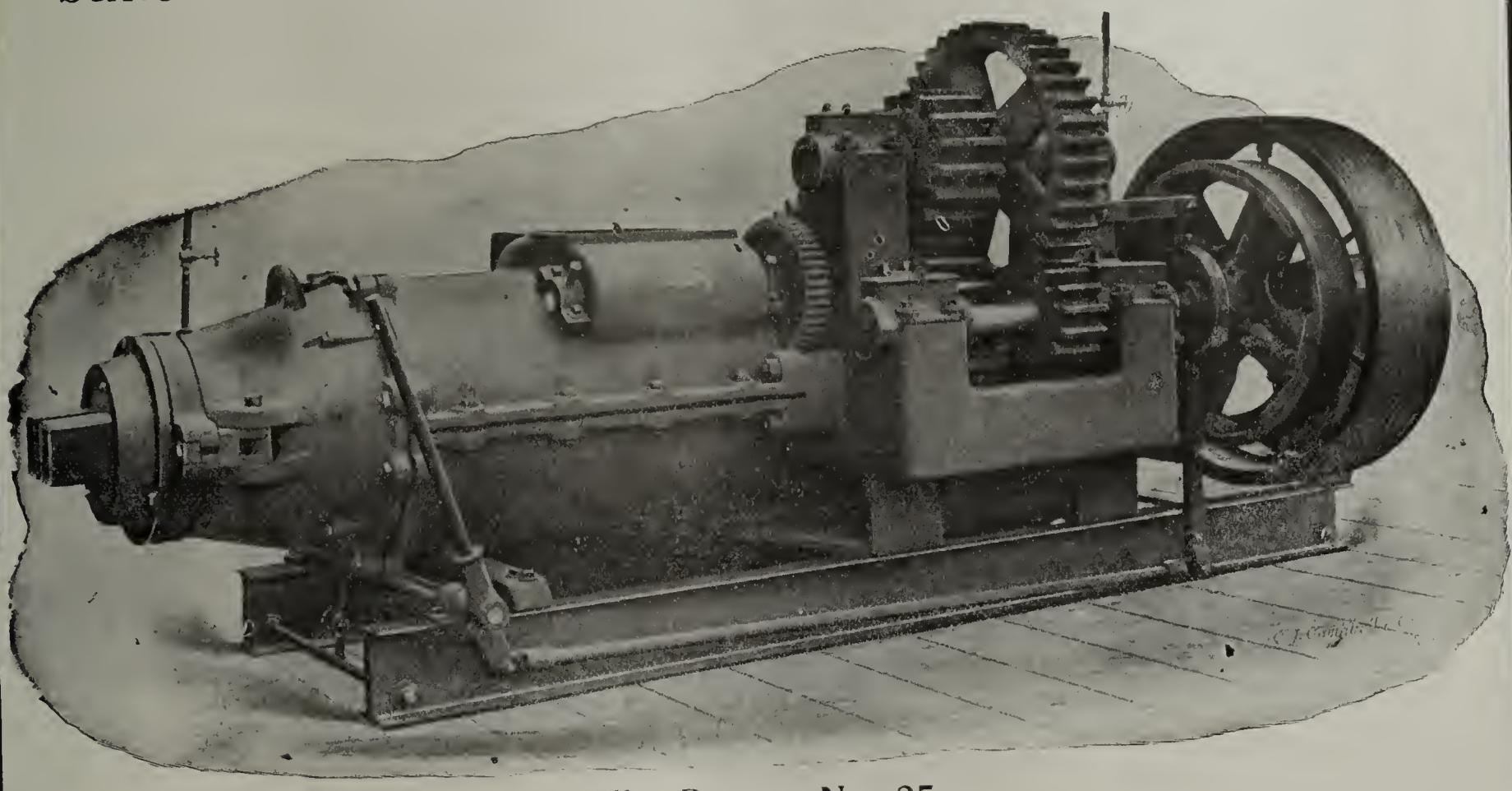

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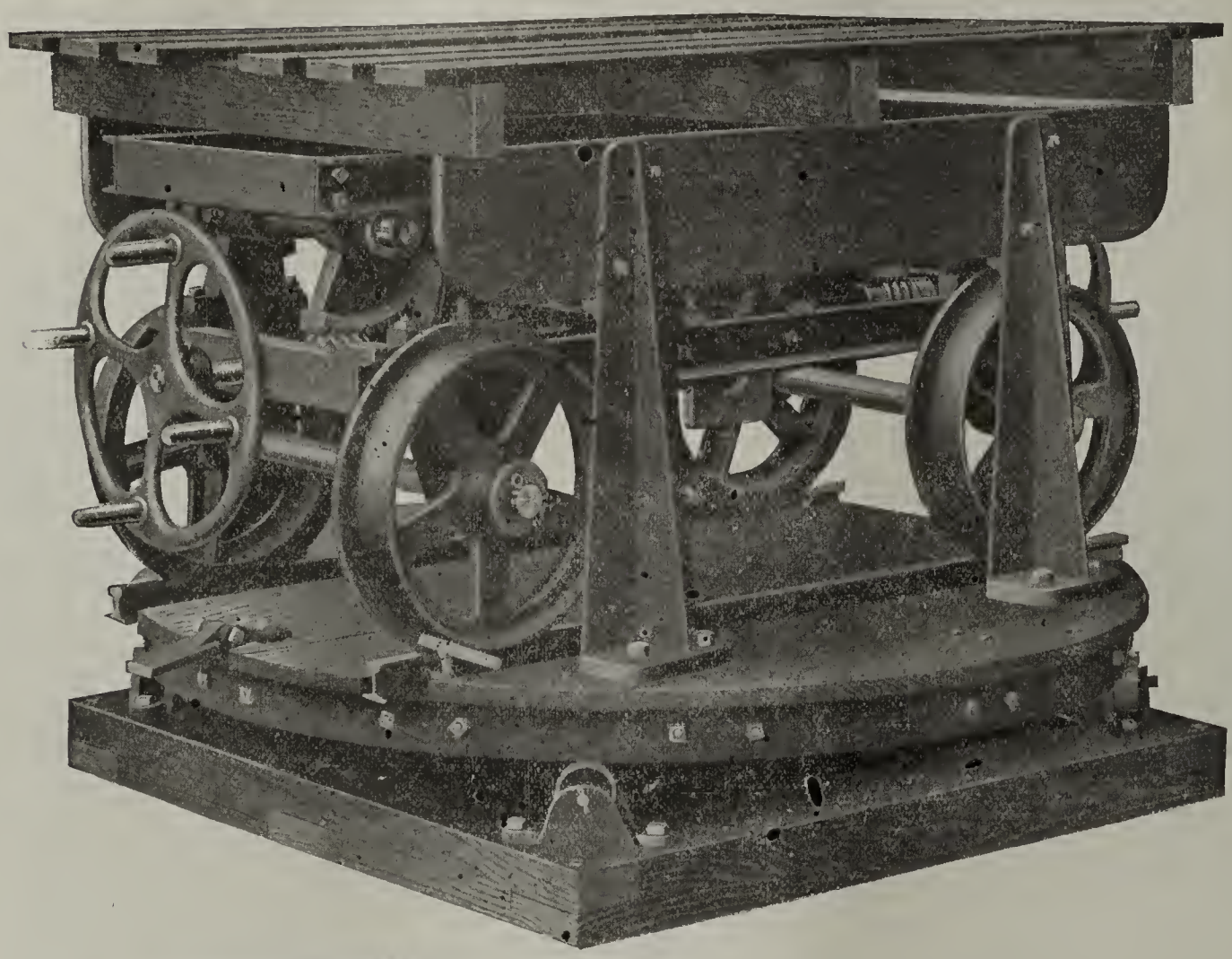

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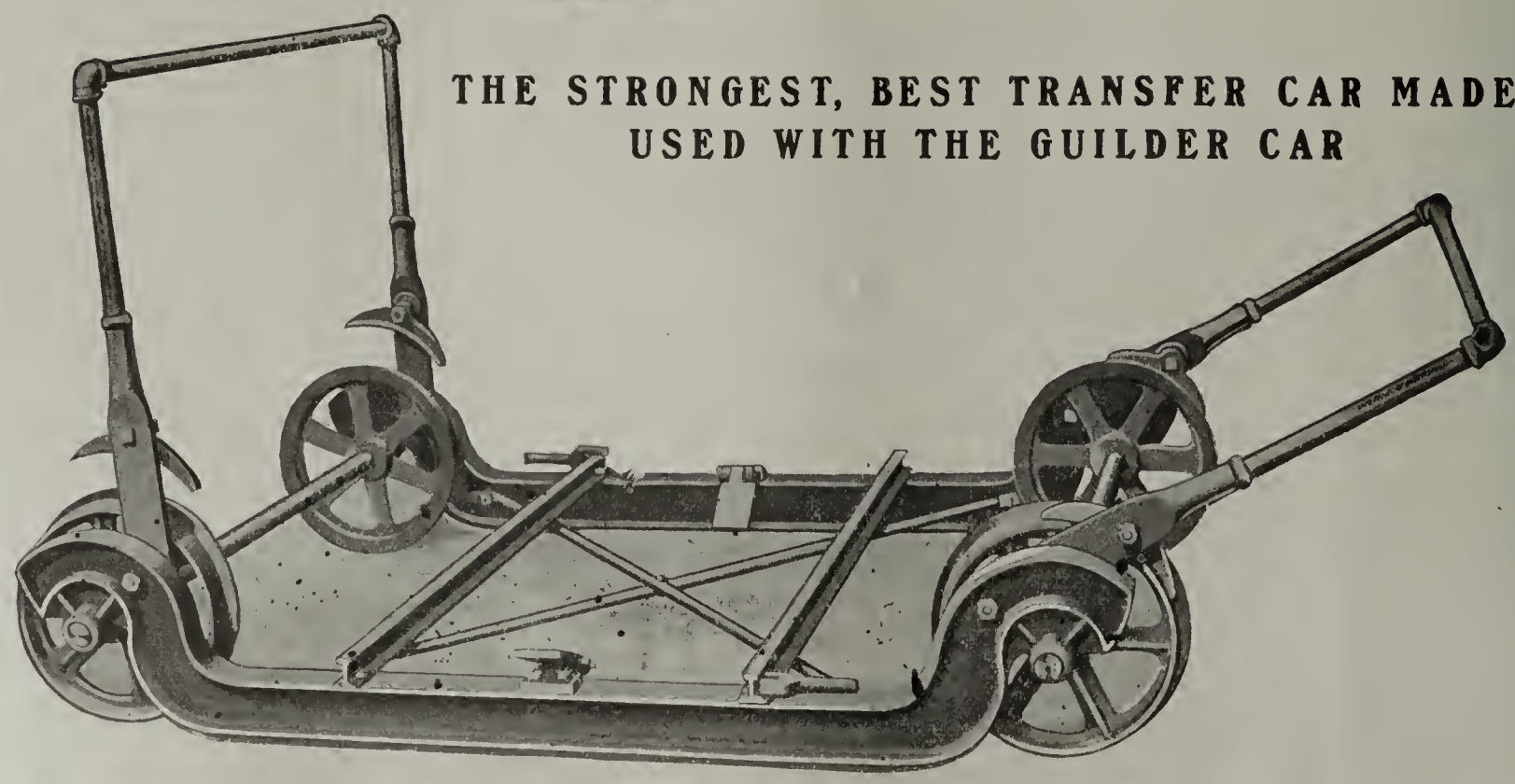

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CLAY RECORD

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REPORT OF ANNUAL CONVENTION OF THE BRICK MANUFACTURER'S ASSOCIATION OF TEXAS

By Paul G. Meyer, Official Asso. Reporter, San Antonio, Nov. 13-14-15

San Antonio during the Fair reminded one of herring in a barrel. Owing to the unusual number of people visiting the Fair and to the fact that the hotels were crowded to their fullest capacity, the plan of escorting the visiting clay manufacturers arriving Saturday night, to the hotel headquarters was abandoned.

Sunday, the second day of the convention was devoted to an informal meeting at the St. Anthony hotel. The San Antonio manufacturers deserve a great deal of credit for the splendid way in which they took care of the visiting members. Their hospitality included an automobile trip to the Fair Grounds and on Monday evening a Mexican supper. Mr. W. O. Fitch was chairman of the entertainment committee, no better selection could have been made.

Monday morning at ten o'clock the business section of the program was taken up.

After the reading of the minutes of the previous meeting, which were unanimously adopted, the first subject on the program was, "Relative cost of burning brick with Lignite, Coal and Oil in Down Draft and Open Up Draft Kilns." It was very ably discussed by Capt. W. D. Green, of Seguin, Texas. He stated that he had had experience with both kinds of brick burning.

In his opinion it takes 1,200 or 1,500 pounds of Lignite and from 1/8 to 1/10 cords of wood, at a cost of $1.75 to $1.80 and $3.00 respectively, which makes the cost of burning brick from $1.65 to $1.80 per thousand.

In burning oil, he stated, that it takes from two to two and one half barrels of oil to burn a thousand brick, and about 1/8 of a cord of wood, making the cost of burning per thousand brick about $2.11 to $2.30.

In the discussion following Capt. Green's speech, Mr. Williams of San Antonio expressed the view that Lignite burning was not only cheaper but also preferable on account of the better brick produced.

"Economical Method of Clay Gathering," the next subject on the program, elicited an impromptu speech from Mr. Montague Staniforth, who showed that he had the subject well in hand. He said in part:

"We have a steam shovel which requires the attendance of four men, one to run it at $75 per month, and the others receive wages of $1.75 per day. Figuring on a basis of twenty working days in the month this will bring the cost of the entire wages paid to $7.50 per day and again presuming that we put out fifty thousand brick a day, it is a matter of easy calculation what the operation of clay gathering costs. A great deal of course, depends upon the method of the car system, which has to be adapted to local conditions."

"Best method of handling clay from cars or sheds to pans, presses or disintegrators."

Mr. A. O. Jones, of St. Louis, Mo., started his speech dealing with the above subject with the remark that statistics were "not" in his line, but that the best method of working economically was in his opinion an underground conveyor which in his opinion can be adopted by all brick plants. This met with a great diversion of opinion.

"The gains of down-draft over up-draft kilns and why?"

The most complete and interesting report of any speaker was undoubtedly that of Mr. John Butler of the Elgin-Butler Brick & Tile Company, Austin, Texas. The following is a verbatim report of his speech:

GAINS OF DOWN-DRAFT OVER UP-DRAFT KILNS AND WHY.

The operation of burning is the most important of all the manipulations which clay undergoes before it assumes its final condition.

To a large extent the success of the clay worker hinges on the change which the fiery ordeal brings about on his material, be it for its good or injury. The higher we go in the scale of Ceramic products the more pronounced will be the effect of burning, and hence the more important.

However well made a product may be before burning, no matter how much skill and patience has been devoted to it, if the burning is not done satisfactorily all this trouble will

have been wasted. It is not surprising therefore, that this subject should occupy the thoughts of clay workers and stand call for the best efforts on their part. Much has been said and written on this very important subject, in fact, so large is the volume of literature in this respect that the reader is confronted by the danger of confusion, for let us be frank about it, much of the information available is contradictory and if analyzed carefully, is found to rest on erroneous assumptions. Yet, the subject of burning depends on natural laws, simple of application and easy to understand. Any one who takes the trouble to become acquainted with a few fundamental facts will certainly succeed in grasping the entire problem of burning and understanding it, will be able to direct the process in acocrdance with the results desired. In order to do this it is not necessary for a clay worker to devote years of study to this subject in the class room, but a few hours applied to the mastering of the terms and fundamental facts will open to him a knowledge which will be of direct value to him, and that which before has been a task but dimly understood, will now become a pleasure.

UP-DRAFT, OPEN-TOP KILN.

Of these there are two designs, namely, English Clamp, and Scove.

The English Clamp is built inclined toward the center, in the lowest point of this cross section a center pier of green brick are set, beginning with base perhaps three feet wide and tapering up to a narrow top at a height of ten or twelve feet on either side, to this core benches of brick are built leaning toward this common center, the benches are symmetrical on both sides, being constructed at once so as not to overthrow the setting. The object of this setting is to cause the brick to shrink uniformly or rather to close up the shrinkage gaps uniformly toward the center so that the interior of the kiln can be maintained airtight and the draft controlled. One of these benches being perhaps four feet wide, the entire cross section of the kiln constitutes a head or heading.

THE SCOVE KILN.

It represents the common up-draft kiln used by the common brick business in this country. The setting of the brick is made open and the combustion gases encircle each brick, the heat is produced almost altogether in arches built into the setting of the base of the kiln. No permanent fire hole, or fire box is used in the common Scove-kiln, but the tempering fire hole formed by the arches serve the purpose very well. However in many so called Scove-kiln constructions, the fire holes are permanent at intervals opposite the arches, fixed in the setting. In most instances these fire boxes are built with projections on the outside of the kiln, so as to form an open space between inside of the kiln and fire box, this space to be used as a combustion chamber. The heat passes upward throughout the mass of the kiln, not by chimneys, but by direct draught as the top is free for the passage of gas, equal in all portions, sometimes however, the draught in one portion or another is checked by the use of sheet iron, sand or some other material. By such devises the draught can in a measure be directed and controlled. Likewise the fire can be distributed over the hot and cold portions of the kiln by putting a fire in the arch back to the center or out to the edge. The arches are frequently provided with cast iron portable door frames and doors, which can be made tight by daubing. The burn in such kilns consumes from six to eight days, depending largely, however, on the character of clay used and also on the kind of fuel. Naturally where gas or oil is used the time is shortened by several days.

Those who travel up and down the country in the interests of clay working are often struck with the remarkable fact, that in spite of all the disadvantages the up-draft kiln is still to be found in large numbers, especially in the smaller yards. It is well understood by the users of up-draft kilns that this variety is wasteful in fuel, because the heat escapes before it has been sufficiently long in contact with the ware to make an economical use of itself, and the flame undoubtedly cooled, so that the smoke and incomplete combustion are always present to aggravate the difficulty and to increase the waste of fuel. Another great disadvantage with easily fusible clays in the up-draft kiln is the wear at the bottom of the kiln, where they have to bear the weight of all the rest. Naturally this is the place where they are always the most highly heated and on this account run a considerable risk of being pressed out of shape by the weight of the ware above. The ware is more easily flashed and discolored and thereby brings a lower price in the market, though this remark does not apply with any seriousness to common brick, in which the appearance and color are of no importance.

These difficulties would seem to the casual student of clay working to be more than sufficient to cause up-draft kilns to fall into disuse, but a careful study of existing conditions will show that nearly all the earthenware made in this country and most of the brick made in the smaller yards are still fired in these "wasteful kilns." One reason for this curious state of affairs is, that the up-draft type is very simple to design and consequently it is cheap and easy to construct. Moreover in starting a plant with a small amount of capital and designed to turn out only a small number of brick or other articles of ware each week, it is often better to have a number of small kilns rather than one larger, so that a kiln holding about 50,000 brick possesses many advantages over larger ones for estate and colonial purposes, and for general use on smaller plants. In such cases the pressure of competition is not so keen as it is nearer the cities and consequently the waste of fuel is not so serious as in a larger plant, as it is, to some extent, balanced by the lower cost of cheap labor and the small amount of repairs necessary in an up-draft kiln. It will thus be seen that the small amount of capital invested in the building, the simplicity of construction, making repairs easy and cheaply carried out, and the very slight damage which such a kiln suffers when not used for some time, more than counterbalances the tremendous waste of fuel which characterizes the up-draft kiln. Consequently

a down-draft kiln works far more economically where there is a weekly outupt of at least 120,000.

There are many cases of small works with half this output which would find the simple up-draft kiln the best for their requirements, while the larger manufacturers would gain their advantage from the more costly down-draft kilns on account of its relatively low fuel consumption. Figures for fuel are always unreliable when given for any type of kiln as not any two kilns, even though built from the same plans, will burn the same amount of fuel. Again the facilities for emptying the up-draft kilns are much easier and cheaper, as a wagon or dray can be driven right in the kiln and load the brick directly on it, whereas the down-draft kiln requires the wheeling from location in kiln to the wagon or dray on the outside.

DOWN-DRAFT KILNS.

This type of kiln is considered an improvement over the up-draft for the finishing of Ceramic Products. There are two different types: Rectangular and round.

The principles of construction are the same but the adoption of the flue system to the rectangular kiln brings in a set of factors somewhat different from the round kiln. There are many types of down-draft kilns, the points or variations lying principally in the following sections: (1) Fire Boxes, (2) Method of distributing the draft uniformly in the kiln. (3) Method of removing waste gases. (4) Relative level of floor and fire box.

Under these four headings nearly all possible variation will be found. As for the rest of the kiln it consists of a fire box wall, commonly called bag wall, covered over by a more or less flattened hemisphere for a crown. The fire boxes are of three designs: (1) Flat Grates, (2) Inclined Grates, (3) Dead Bottoms.

The classification applies to fire boxes for solid fuel. The four principles of a down-draft kiln, as given above, are used in many different ways, and their efficiencies are largely dependable for good results, on the character of clay used and the quality of ware desired. Perhaps one of the most important advantages of the down-draft kiln is that of its strength, for when properly built and well banded, it remains for years without cost for repairs. The cost of fuel, regardless of character, is cut with very noticeable figures, when compared with the fuel cost of the up-draft kiln.

DISTRIBUTION OF HEAT.

The heat having the downward tendency in the down-draft kiln, it is much easier to spread it to other parts of the kiln than it is when the heat ascends, as in the up-draft kiln. Heat is more local in an up-draft and cannot be regulated or distributed with any great amount of success. Again heat gives better results in the covered arch of the down-draft than it does in the corners and walls of the up-draft. The down-draft kiln is much easier for the burner to handle, as he can regulate his draught to a degree of certainty, with his dampers, and can therefore burn his kiln with a more even temperature throughout, whereas he is a very capable burner who can burn an up-draft kiln without a cold spot. A fact therefore which every burner of a well built down-draft kiln appreciates, is the greater regularity of heat obtainable in this form of kiln. The bottom brick which bear all the weight are never overburned. The ones most liable to suffer from this cause are found at the top of the bag wall, near the top of the kiln. The down-draft has another factor which enables the better success of the burn and that is the stack, which gives a uniform draught to the entire kiln.

It has long been the custom among the up-draft burners to surround a cold spot with several courses of brick one above the other. In fact they erect a miniature stack. This alone goes to show that something better is wanted to help the burner to regulate this heat. Brick are checked in the up-draft through the alternate heating and cooling of the arches. Whereas the brick in a down-draft kiln are screened to a certain extent by the bag wall at the back of the fire box, which prevents a rush of cold air directly upon the burning ware. Before the air reaches the ware it has to pass up the full height of the hot bag. The down-draft flame has more work to do than the up-draft as it travels almost horizontally to the bag, thence up to the crown, thence down through the entire body of ware. Thus it spends more time in the kiln, travels further and is exposed to a greater friction which causes a more intimate mixing of kiln gases, which signifies economy of fuel consumption. It will thus be seen that in choosing the kind of kiln best suited for a particular place, attention must be paid to a number of points, among which the amount of fuel consumed is an important factor and the widely different requirements of different yards each to be used on account of special advantages they confer under prevailing conditions.

Summing up the different phases of kiln construction, I would suggest, all things being equal, the down-draft kiln for high grade face brick and paving brick, and where a high heat is required to burn the clay, and for common building brick made from easily fusible clay, as is generally the case I would recommend the up-draft kiln.

Mr. Bennett in indorsing Mr. Butler's views said that his experience is that the consumption in an up-draft kiln is 107 higher and that the use of down-draft kilns produces a better grade of brick, and the loss in and around the arches is less.

"What fineness is best to produce high grade pressed brick? How many should be made per day on four mold press and is it necessary to use clay mixers?"

Mr. M. J. Carlton, Elgin, Texas, dealing with the subject, claimed that the screening proposition is absolutely a matter of local condition.

With regard to moulding brick it was his opinion that from 15,000 to 18,000 could be produced satisfactorily with a four-mould press, but that if the press was in ideal condition as many as 20,000 could be produced.

"Relative difference between the use of waste heat on open up draft kilns, down drafts and continuous with the best methods of extracting heat from the kilns."

As none of the speakers on this subject were present and none of the members in attendance felt able to discuss this subject, the matter was passed up.

"Relative difference between handling labor on brick plants by task system and day labor."

Mr. F. J. Carle, of D'Hanis, Texas, showed an intimate knowledge of this subject. He said that while in a certain

measure this would be a matter of local conditions there could be no doubt as to the superiority of the task system. It does away with loafing, stealing employer's time, and the many other disagreeable features of the day labor system. By figures and facts he showed to the satisfaction of members that the cost is considerable less, in fact reduced to an average of one-third. Questioned if he had found this system detrimental to his machinery he claimed that the wear and tear on his machinery is no greater than when the other system was in operation.

"System of handling our association work."

This was a topic that created general enthusiasm and stirred up some activity among the members. No speech by any individual member was made on this subject, but the following points in the discussion were brought out:

The secretary is the heart and soul of any association. In our secretary, Mr. J. M. Harry, we have the best and most unselfish man any association can boast of. The only way to get this association strong enough to be taken notice of by the legislature with regard to the passing of the Lien Law in the near future is for every member to be enthusiastic and become an agitator for the association. This is best accomplished by members in their individual localities visiting brother manufacturers and those affilated with the brick industry and boost this organization.

At a meeting recently of the Builders' Association it was stated that it would require about $5,000 for the passing of the Lien Law and it is expected that this association will be called upon to pay its pro rata.

In connection with this, the following resolutions were proposed and unanimously adopted, to be placed on record:

(1.) We, the Brick Manufacturers' Association of Texas, in convention in the city of San Antonio, Texas, do hereby resolve to appoint a committee of three members, including the president of the association, and consisting of the following brick manufacturers: Mr. J. M. Harry, Mr. W. R. Bennett, and Mr. W. E. Weatherford.

It is the wish of the association that this committee have full and unlimited power in all matters pertaining to this association.

It shall be the duty of the committee to reorganize the association and to increase the membership dues for the coming year to $10 (Ten Dollars). This committee to have the right to draw on members for this amount or any amounts due this association for past membership and to enforce the collection of said amounts.

(2.) We hereby allow the secretary of this association, Mr. J. M. Harry, a sum of $200, of not exceeding $200 (Two Hundred Dollars) for him to use at his discretion to further the interests of the association. This sum in particular is to be used for such help as from time to time he may need, especially for stenographer or other incidental expenses.

(3.) Superintendents of brick plants, owners of which are association members, shall be allowed to attend the meetings and conventions of the association.

(4.) *Resolved*, that above committee take the question of Lien Law up with the Builders Exchange with a view of reducing the cost accruing from the passing of said law. Committee is to report at next convention with regard to steps taken in regard to this.

(5.) *Resolved*, that letters pledging the support of this association be written to the Louisiana and the National Brick Manufacturers' Association and at the same time advising them that this association would do everything in its power to co-operate with these associations and be in attendance in full force if the next national convention takes place at New Orleans.

Resolved, that a letter of condolence be written by the secretary of this association to Mr. J. Songer, on account of his son's death.

(7.) *Resolved*, that a letter of thanks be written by the secretary of this association to the Chamber of Commerce, San Antonio, for the use of their hall.

(8.) Vote of thanks to members of Southwest Texas for their splendid hospitality.

(9.) Vote of thanks and appreciation to retiring officers.

(10.) *Resolved*, to make Laredo next meeting place, date to be determined upon later by the above committee of three. All members to be advised one month prior to meeting.

Be it recommended that members in the different localities of this, Our Native State, get together, and install among themselves a legitimate system whereby they will keep themselves posted as to slow accounts or of persons unworthy of credit.

The following members were selected officers for the coming year: President, John Butler, Austin, Texas; vice-president, W. E. Weatherford, Ferris, Texas; second vice-president, S. N. Johnson, Laredo, Texas; secretary and treasurer, J. M. Harry, Dallas, Texas.

Following the election of officers, the convention was declared over and adjourned *sine die*.

The rest of the afternoon was devoted to a visit to the brick plants of the local members, the San Antonio Brick Company and the Williams Brick Company.

AN ATTEMPT TO CALCULATE THE AMOUNT OF HEAT UTILIZED FROM A DOWN-DRAFT KILN BY THE WASTE HEAT DRYING SYSTEM*

By A. E. Bleininger, Pittsburg, Pa.

In a test made some time ago the heat distribution of a down-draft kiln employed for burning hard building brick was calculated, based upon careful measurements of the kiln and exit temperatures, the composition of the waste gases, the fuel and the ashes, together with the weight of the coal and of the ware. The result was summarized as follows:

Heat lost by the fuel gases	27.33%
Theoretical heat required to burn the bricks	19.55%
Heat lost by unburnt carbon in ash	3.51%
Heat taken up by kiln and lost by radiation	49.61%

At the close of the burn a 30-inch goose-neck was inserted into the door of the kiln which connected with an underground flue leading to the dryer. The air was thus drawn from the kiln by means of the large fan located at

[illegible] meeting of the American Ceramic Society.

the dryer. A draft gauge was then connected with the goose-neck for determining the "head" caused by the pull of the fan. This was found to be quite uniform and equal to 14 divisions of the Richardson-Lovejoy petroleum gauge which corresponds to about ¼-inch of water by actual measurement. A thermo couple was likewise inserted into the goose-neck which was replaced later by thermometers. In this manner the temperature of the air leaving the kilns was carefully measured for 108 hours.

In attempting to calculate the amount of heat exhausted from the kiln by means of the fan we must know first the velocity of the air through the pipe. This it was only possible to approximate, since the draft gauge was not calibrated against an anemometer. The final value of the velocity accepted is lower than the actual velocity, since no attempt was made to use the Pitot tube correction factor, which is greater than unity. The theoretical velocity calculated from the head shown by the gauge, giving a lower value, was hence used, neglecting the decrease in the viscosity of the hot air and other factors due to cooling between the kiln and the fan. This, it is believed, did not introduce any significant error, since evidently the velocity was fairly uniform throughout the test. The velocity is thus calculated from the formula.

$$v = V\ 2\ g.\ h\frac{d_1}{d_2}$$

V=velocity in meters per second.
g=gravity constant=9.8 m.
h=head of water, expressed in meters=0.000 m.
d_1=density of air at 0° C.
d_2=density of water at 0° C.

Substituting we have

$$v = V\ 19.6.\ \ 0.006.\ \ 772 = 9.46 \text{ m.}$$

The velocity of the air was taken to be 9.5 m. per second.

The time was divided into nine periods of 12 hours each and the mean exit temperature calculated for every period. These were found to be as follows:

0— 12 hours	885° C.
12— 24 hours	715°
24— 36 hours	640°
36— 48 hours	540°
48— 60 hours	435°
60— 72 hours	355°
72— 84 hours	265°
84— 96 hours	185°
96—108 hours	135°

With a pipe diameter of 30 inches and using the velocity above calculated we have a discharge of 4.18 cu. m. per second or of 180,576 cu. m. during 12 hours. Owing to the fact that the test was carried on during the driest and hottest part of the summer, with an average temperature of about 20°, the humidity approximated at 50%. This figure is purely a guess, since the hygrometer was found to have been broken during transit. However, the introduction of the atmospheric moisture factor is not an important one, numerically. Assuming a vapor tension of 8.7 mm., the volume of steam introduced for the volume of air given above would be 2094 cu. m. The barometric pressure was taken to be 750 mm.

There remains now to calculate the weights of air and steam taken through the pipe for each period as well as the heat removed. This is illustrated for the first period as follows:

$$\text{Air } .. 180576\frac{273}{273+885}.\ 1.275.\ 865.\ 0.237 = 11,127,000 \text{ kg. Cals.}$$

$$\text{Steam } 2094\frac{273}{273+885}.\ 0.797.\ 865.\ 0.48 = 163,360 \text{ kg. Cals.}$$

Total heat removed by air and steam.. 11,290,360 kg. Cals.

In this calculation 0.237 and 0.48 are the specific heats of air and steam respectively. Tabulating the results we obtain:

Period	Total number of kg. Calories
1	11,290,360
2	10,632,820
3	10,264,510
4	9,667,880
5	8,858,130
6	8,063,050
7	6,883,290
8	5,444,750
9	4,260,190
Total	75,364,980

The coal used during the burn had a calorific value of 6200. Hence the weight of coal equivalent to the amount of heat drawn from the kiln would be

$$\frac{75\ \ 364\ \ 980}{6200} = 12,155 \text{ kg. or}$$

26,741 pounds. During the entire burn 95,045 pounds of coal was used. The heat exhausted from the kiln during cooling then equals 28.1% of the total heat introduced, so that the heat distributed could be rearranged as follows:

Heat lost by flue gases	27.33%
Theoretical heat required to burn the ware	19.55%
Heat lost by unburnt carbon in ash	3.51%
Heat stored by kiln and ware and recovered for drying purposes	28.10%
Heat lost by radiation and left in kiln and ware unused	21.51%
	100.00%

The recovered heat thus amounts to the equivalent of practically 400 pounds of coal per thousand brick, or speaking more correctly, about 130 pounds of coal per ton of burnt clay, which is more than the heat theoretically required to burn the brick. It is evident that not all of this heat is used in drying brick, some of it is lost on the way to the drier and in the latter itself. That a considerable amount of the heat is derived from the hot kiln walls is apparent from the comparison of the figures in the final distribution. Owing to the fact that this test was carried on in summer, the results show the most favorable conditions under which this particular kiln operates. In winter the heat actually available for drying would be considerably less, owing to the increased loss by radiation during cooling.

REPORT OF ART AND DESIGN COMMITTEE TO THE UNITED STATES POTTERS ASSOCIATION

Gentlemen of the U. S. Potters Association:

In offering this report we find ourselves wondering if any member of this association, now listening to this reading has given the recommendations offered by this committee in 1907 and 1908 any serious thought. A favorable discussion by trade and labor publications was noted early in the present year, yet nothing in the way of concentrated effort developed on the part of the membership or officers of the United States Potters Association.

Why do we not refer the recommendations of our Standing Committees to Special Committees, thus opening the way for discussion at our Annual Convention? In doing so we would develop interest, giving each member the privilege of attaining knowledge which might be helpful to him in keeping up with the *fast rising* standard of American Ceramics, also impelling the individual members of your committees to do conscientious and careful work in preparing their reports, and who would become thoroughly inbued with the thought that they might, at least, win condemnation or approbation, either one being preferable to indifference.

In referring to the productions of American Potteries during the year now closing we can only use the words of an Optimist: "Never before has such progress, on general lines, been made."

The year 1909 has been a wonder worker, giving substantial encouragement to those manufacturing potters, who had the courage of their convictions in offering the trade original designs in shapes and decorations that were truly *Commercial Art,* combining the artistic with the utilitarian.

The greatest progress seems to have been made in the production of high grade dinner ware.

Heretofore the American Potter leaned heavily on the producers of decalcomania—a change is taking place—individual effort on the part of Art Director, Head Decorator and Modeler is demanded, as a result the offerings of several American Potteries shows that a definite theme was carefully followed, from the rough block in the modelers hands, through all stages of making and decorating, until the finished product was ready for the market—a condition greatly in contrast with much of the effort put forth in former years—and strongly indicating the dawn of a new era in American Potting.

In the producing of high grade decoration, there is an increasing demand for skilled labor, printers, groundlayers, colorworkers, tracers, and gilders, who are capable of doing first class work, in some instances the demand has exceeded the supply.

The day is fast approaching when skilled labor in the pottery industry will be at a premium and it seems to us, it is about time for a concentration of effort to prepare ways and means along the line of industrial education to meet the fast increasing demands of the American people for high grade pottery, "Made in America."

The time has arrived when the American Potter need not hesitate in increasing the initial cost of production and decoration, the purchasing limit has been lifted, he may now feel secure in making sales if the goods look equal to the price named.

If ever there was a time for a general uplift, it is now.

The great American buyer and consumer is demanding better things from the domestic manufacturer, which includes Pottery.

The discerning consumer seems to be tiring of cheap and flashy gold stippling, gold dapple and heavy, clumsy, bright gold tracing, judging from the popularity of decorations requiring fine color tracing and coin gold work.

There is a large field open for the studied effort of the American decorator in the application of colors and lustres, with spraying machines or air brush—with the aid of stencil composition or tin foil.

Foreign decorators of specialties show many novel and trade winning effects, resulting from the use of stencil designs, particularly when used in combination with decalcomania sprays made up of white and neutral tints—in this class of work there is ample opportunity for individuality in design and adaptation.

The progress of the present year, points with no uncertain finger to the fact that we need to turn our thoughts toward industrial education and make some preparation for the future—it is not a theory, but a very convincing fact, and should merit careful thought.

The Cleveland Technical High School has the distinction of being among the first schools to take up the matter of clay working and especially that of pottery. This building will accommodate 1,000 students, contains 65 class rooms and complete courses in pottery and clay are given. The Pottery department contains necessary jollies, throwing wheels, whirlers and other equipments necessary for proper instruction. The matter of pottery manufacture has as yet been given practically no attention, but the larger cities are adopting it, and pottery departments have been installed at Boston, Mass., Cleveland, Ohio and other cities, while a number of colleges have already taken up the work.

Why cannot an effort be made to establish Technical High Schools in all pottery centers? thus creating an atmosphere favorable to a high development of technical skill and industry, reviving "Craft Pride."

The National Society for the Promotion of Industrial Education, which was permanently organized in November of 1906 at Cooper Union in New York city, is doing a great work in its systematic effort to place before its members valuable contributions to industrial education published under auspicies other than its own. Through the distribution of these valuable publications and the active correspondence now carried on by the National officers with the nine state branches and the twenty-eight state committees, the organization may justly be said to be fulfilling its function defined by its late president, Dr. Carroll D. Wright, as "a clearing house of industrial education for the country."

We here offer a few extracts from the society's publication:

"Industrial education will be greatly beneficial to the individual and the state if it reduces the term of apprenticeship and aids the individual in increasing his capacity as a producer and wage earner."

"For forty years or more this demand for fineness and beauty in manufactured products has been steadily gaining ground. Its influence has been clearly manifested in the great world exposition. It has become a well recognized element in international competition."

"The Commercial advantage in the near future will rest with the nation, which can make the finest combination of inventive skill, with beauty of design and workmanship."

"The way to industrial education lies not in a more complex curriculum in existing schools, but in a larger variety of schools, each with a simpler program and each seeking to do well the work it sets out to do."

"No series of schools can finally survive which does not relate itself to the public school education; hence, the course from which pupils are to be drawn, must in the long run be the public schools."

"In 1876, at the Philadelphia Centennial, Germany found herself beaten by other nations in the field of art and industries and her commission to the Exposition cabled to their government, "Our goods are cheap but wretched." Twenty-six German states immediately determined to make an effort to regain the lost ground by educating the people. In twenty years she had doubled her exports. This was accomplished by incorporating in her schools systematic art instruction.

The United States Bureau of Education has emphasized the importance of this matter in a circular issued some years ago. In this it was urged that if we wish to have in this country skilled workmen to compete with the skilled artisans of Europe, thereby improving our manufactures, we must begin with the work of training such workmen in our primary schools."

"The boy who leaves the public schools without any industrial training must of necessity, as a rule, take up his work in life as an unskilled worker."

"Our society stands pledged to give our boys and girls this chance, and we appeal to you, as we appeal to the whole nation, to help in this great and grand movement, and we think that in time we can look forward to a future for this nation; such as is almost beyond our dreams. This country is awakening. The interest in the movement for industrial education is latent; it needs a longer haul, north, south, east and west, to bring the fruitage which we all so intensely desire for ourselves and those who will carry on the work of the world after us, effectively and efficiently."

Can we, as representatives of a great, important and growing industry, conserve our best interests in failing to become a part in the work being carried on by the National Society for the promotion of industrial education?

Feeling the great importance of the subject we cannot refrain from again calling your attention to the desirability of establishing permanent exhibits of American Ceramics in the museums throughout the United States.

Herewith we offer for your consideration the request of W. J. Holland, Director, Carnegie Museum, Department of the Carnegie Institute, Pittsburg, Pa., which reads: "We desire in the new gallery, which is being opened at the Carnegie Institute, to make a display illustrative of the fictile art in America, and we should be especially glad to secure specimens illustrating the art as it has developed itself within the region of which Pittsburg is the metropolis. Such an exhibit cannot fail to possess great interest, not only for students, but for the public at large. As you know, over a half million of people annually visit our museum and there are few places in America where such a display would have a greater educational value. I trust that a general interest among the manufacturers may be awakened in the exhibit."

Your committee is very much in earnest and urgently desires your favorable consideration, as an association and as individuals, of the project looking forward to the establishing of a permanent exhibit in the Carnegie Museum.

The keynote of this report is: "the need of concentrated effort."

Our view point is: "the possibilities of industrial education."

Respectfully submitted,

WM. A. RHODES, *Chairman.*
Art and Design Committee.

East Liverpool, Ohio, November 30, 1909.

TRENTON TILE COMPANY GETS ORDER FROM JAPANESE COUNT

The Trent Tile Company, Trenton, N. J., has received a large order from Count Kagawa, chief chamberlain in the court of the Japanese empress at Tokio. The order was accompanied by blue print drawings of Count Kawaga's proposed home with instructions concerning the design and colorings of the tile to be used. Alfred N. Lawshe, treasurer of the concern, will forward watercolor paintings of the designs to Tokio, and if they are acceptable the work on the order will be begun within a month. This is the first order received by the concern from Japan.

STEAMING VALUE OF RUN-OF-MINE COAL AND OF BRIQUETTS

Some conclusions as to the value of briquets for locomotive fuel and a few suggestions as to the possibility of getting more work out of a locomotive boiler are given in a report by Walter T. Ray and Henry Kreisinger that has just been published by the United States Geological Survey as Bulletin 412. The Survey is investigating the mineral resources of the country and is making tests of various kinds and forms of coal with the object of determinining how to reduce waste in the utilization of coal, how to increase the value of the abundant low-grade coals, and how to adapt different coals to briquetting.

The primary object of the tests described in Bulletin 412 was to study the relative performances of two sizes of briquets and of coal, with reference to efficiency, tendency to smoke, and the ease with which steam could be kept up, when each of the three forms of fuel was burned at several rates of combustion. One object kept in mind was the finding of ways for working locomotive boilers harder, although with present locomotive designs the steam production may sometimes be made sufficient to keep the wheels slipping, so that the engines have no use for additional steaming ability of the boiler.

The more important results and conclusions for the locomotive used may be briefly summarized as follows:

At low rates of working, run-of-mine coal gives a higher equivalent evaporation than briquets; at medium rates there is little difference; at high rates briquets do considerably better.

There is little difference between the large and the small briquets; the larger ones crumble less; the smaller briquets are easier to fire and to level on the fire than the larger ones; either form gives the fireman far less work and trouble than run-of-mine coal.

In sparks briquet fires lose less than coal fires.

On roads having heavy grades it will probably pay well to burn briquets, at least part of the time.

The high-capacity test run with briquets by no means reached the upper limit of fairly efficient combustion and evaporation, but it was higher than is likely ever to be attained by such draft as is feasibly available from a nozzle.

These particular briquets produced about as much smoke as the coal under similar conditions; some of the blame for this tendency to smoke may rest on the pitch binder.

Perhaps it would pay to add combustion chambers several feet long to the front ends of some locomotive fire boxes, and to use a larger number of boiler tubes of shorter lengths and smaller diameters.

The most useful secondary conclusion demonstrated is that the combustion of suitable fuel can be kept about the same in completeness over a very wide range. This result is a consequence of the scrubbing action of rapidly moving currents of gases. In the combustion in the fuel bed the CO_2 formed at the surface of the particles of fuel and clinging to it is scrubbed off and replaced by fresh uncombined oxygen.

The bulletin comprises 32 pages and is illustrated by several diagrams. It may be had without charge by applying to the Director of the Geological Survey at Washington.

Edwin A. King, manager of the King Engineering Co., of Richmond, Va., is at the Mansion House, Cliffwood, N. J., where he is now remodeling the Crown Dryer equipment of the Cliffwood Brick Co 's plant. Mr King is one of the best dryer doctors in this country, and is called to all parts of America to take care of defects in dryers.

UNION BRICKLAYERS OF INTERNATIONAL MORTUARY BENEFIT FUND

A proposition for mortuary benefits for the members of the Bricklayers and Masons' International Union is to be sent out from international headquarters in Indianapolis, Ind., to the various local unions of the organization. These locals will vote on the plan submitted during the month of December, and the vote will be by locals. The result of the vote will be announced at the next biennial convention of the organization, to be held in January, 1910. At present some of the local unions have mortuary benefit features, but the organization has no international mortuary benefit feature.

The plan that will be submitted to the vote of the various locals was drafted by a committee appointed by the international executive board, in accordance with action taken at the last biennial convention. In its report, the committee says: "It is absolutely necessary for the progress of the B. and M. I. U. that mortuary benefits should be paid to those who are now members of our organization, and those who are to be. As it is now, only unions of large membership have mortuary benefits, while hundreds of unions are too small to establish one. By adopting an international mortuary benefit we can be assured of that protection wherever we hold membership."

The plan provides that the time for putting the international mortuary benefit into effect, provided the plan is adopted, shall be July 1, 1910, and that the collection of the per capita tax for the fund shall begin January 1, 1910. Under the head of the estimated cost of the plan for one year, the average number of deaths a year is given as five hundred; average death benefits, $175; per capita tax to mortuary fund for one year, $90,000, and amount of death claims, $87,500.

It is provided in the plan that every applicant for membership in the Bricklayers and Masons' International Union shall, at the time of initiation, pay the sum of $1 for the mortuary fund. The plan provides that on the death of a member in good standing, who has been such for one year, $100 shall be paid to the beneficiary. On the death of a member in good standing, who has been such for five consecutive years, $150 shall be paid to the beneficiary. On the death of a member in good standing, who has been such for ten consecutive years, $200 shall be paid to the beneficiary. A per capita tax of 12½ cents a month a member is provided for, the funds to be used for the payment of death claims.

It is provided that the international secretary shall keep a record wherein shall be written the name, age, standing and location of every member of the international, date of initiation, suspension, withdrawal or death, and no death benefit shall be paid unless the name of the deceased member appears on the register, or upon a member who is more than three months in arrears. In case a member who dies has no beneficiary, the expenses of his burial shall be paid out of the money, and the remainder, if any, shall revert to the international death benefit fund.

The plan further provides that the financial secretary of each subordinate union, immediately after each meeting, shall report to the general secretary the names of all members initiated, admitted by traveling card, to whom traveling cards have been issued, suspended, reinstated, or dropped from the rolls, stating the date and cause of suspension and why dropped. The secretary failing to report these matters, according to the plan, shall be fined $5, which shall be paid into the mortuary fund.

There also was referred to the committee the matter of an old age pension, but the committee reported in regard to it that it had lacked sufficient statistics as to the age of the membership, and would be obliged to postpone outlining a plan until after an official roster of membership was obtained.

POTTERY BUSINESS FOR 1909 WILL BREAK ALL RECORDS

Records of the production of domestic pottery for 1909 will far exceed those attained in 1908. Throughout the United States the general ware potteries have been experiencing the busiest season in years, during the past six months.

Pottery manufacturers of both general and art ware broke records for production during October in a great many instances. Their trade increased over one-third over the October of 1908. Business for November is at its height, and many general ware manufacturers report many orders still coming in for 1909 shipment.

There has been no material changes in prices of domestic pottery during the year, although the enactment of the new tariff schedules has spurred the American pottery manufacturer to further effort. There has been a vast improvement in the quality of American pottery during 1909. The body of the ware has been advanced, while the decoration is superior to anything heretofore created in American plants.

Exporting of American pottery for the present year will be larger than heretofore noted. Western pottery manufacturers have been doing a very good export business during the year, but they have been saying nothing about the new field they have entered.

The large department stores in the east were large users of this cheap ware, but now that it cannot be bought in quantity, they are ordering better goods, and this is why the American pottery manufacturer is being spurred on to a greater effort in order to get the best ware from his kilns that it is possible to produce.

Increase in the construction of new buildings throughout the country has had a good effect upon the sanitary pottery trade, both in the Trenton and Wheeling and western districts. More sanitary pottery is being sold today than ever.

Electric porcelain plants throughout the country are doing an excellent business, and reports from many districts show that all such factories are working to capacity. The increase in the use of electricity, both for power and light, has increased the business of the electric porcelain manufacturers.

An increase in the use of inverted and upright gas mantle and the creation of new shapes of burners has opened a new field in the clay industry. Every inverted gas mantle is attached to a small clay ring, especially formed in steel dies. Several years ago there were only one or two manufacturers of these clay rings in the country, but there are over a dozen manufacturers in the business today.

The brick industry in and about the Ohio Valley promises much for the new year, although the volume of business for 1909 has exceeded that for 1908. Paving brick manufacturers have been receiving reports from all sections of the volume of brick paving to be done by towns and cities for 1910 and the indication is that all these plants will have enough orders on their books to keep them going the limit of capacity for next season.

When steel mill and blast furnaces are in operation, the manufacturers of fire brick are assured of a heavy trade. There is only one fire brick plant near the Ohio-Pennsylvania state line in Pennsylvania that is at present behind in its orders 6,000,000 brick. These brick are used mostly in blast furnaces.

In all lines of clay industry, those plants located in Western Pennsylvania, Ohio and West Virginia, have much to look forward to during the coming year. Many contend that it will be the most prosperous year in their history.

Joseph Simons, president of the Simons Brick Co., and one of the big democratic wheel horses of California, is now a benedict. He married Miss Irene Coulter of San Francisco. They will be at home at Los Angeles by the first of the year.

PACIFIC COAST NEWS ITEMS

Good building weather still continues on the Coast and much work of this character is still being done and movements of brick have been very encouraging. In San Francisco there seems to have been a slight falling off in contracts for brick work, due largely to the fact that the demand for store buildings in the downtown district has been largely filled. Residence work is occupying the bulk of attention from builders at the present time, and this is calling for more lumber than brick. Still during the month of October there were permits let for $848,160 worth of brick structures and most of these are for immediate construction. There are a great number of large brick buildings being planned and some large contracts are expected before next spring by brick dealers. At the election held this month an entirely new set of public officials was chosen and it is anticipated that work on municipal buildings will be rushed. A new set of plans have been drawn for a new City Hall on the old site, and according to these plans, a brick structure will be erected. The new Hall of Justice on Kearny street now has about one half of the steel work in place and some large quantities of brick will be needed here within a short time. A new County Hospital to cost $2,000,000 has been started, and taking it all in all, there is an unusually large amount of municipal work that will soon be requiring brick. In addition, there is a great deal of new sewer work planned for next spring, and this will take immense quantities of vitrified brick. Work has been commenced on the erection of the Examiner building at Third and Market streets, this structure to be the highest in the city. Brick and red tiling will be used in large quantities here.

Prices of common brick are still rather low in San Francisco, as most manufacturers are carrying very large stocks and some of the smaller ones are very anxious to realize on their goods. There have been sales during the past two weeks at less than $7 per thousand for common brick, but it is not believed that much more will change hands at these extremely low figures. Most of the plants have closed down early this season, the exceptions being a few which have large contracts to fill. In Los Angeles and vicinity there appears to be a better feeling in the brick market and prices have been advanced there quite recently. For a time common brick was sold at $6, but during the past two weeks the price has been boosted to $7.25 and it is declared that the demand warranted the advance. Blue brick that has been selling at $10 a thousand is now selling for $12, and tile and the better grades of brick have advanced 20 per cent in price during the past two weeks. Building operations in Los Angeles are quite heavy and there is a heavy call from some of the nearby districts which are experiencing building booms.

The Carnegie Brick & Terra Cotta Co., which has plants near Stockton, Cal., suffered a heavy loss a few days ago by explosions of gas in the boiler rooms. Gas exploded under three boilers at the terra cotta plant wrecking the machinery and later the building was destroyed by fire. Three days later five boilers in the brick department were ruined by gas explosions, there being three explosions in all, and thus the entire plant of the Carnegie company, with the exception of the pottery department has been wiped out. This department is located about two and a half miles from the other departments and is still running. The loss will be especially heavy as the company had several very large contracts on hand to be filled. The loss has not been approximated, as yet, as it is not known here how much of the machinery can be repaired for service again.

In addition to being a great pottery center, Lincoln also promises to be a manufacturing center for the glass industry. Some fine sand is located there and eastern capitalists are investigating the advisability of establishing a factory there.

The Los Angeles Pressed Brick Company, which has been erecting a new plant at Richmond, Cal. now has most of the plant in operation and is engaged in turning out red pressed brick. The San Francisco field is now being entered and several large contracts have been secured there. The face brick for both the Olympic Club building and the new Children's Hospital will be furnished by this concern. The United Material Company has been appointed the local selling agents.

The California Pressed Brick Company, which operates a plant at Niles, Cal., is making great improvements there and will soon have a very large plant in operation. A new 125-foot chimney is now being erected and a new continuous kiln of large size will be completed in less than a month.

The Pure Clay Brick & Tile Co. has commenced operations at Santa Rosa, Cal., and has contracts on hand to keep it busy for some time, one of the largest being an order for 200,000 brick to be used in the new Masonic Temple to be erected at Sonoma. This company took over the Hilton yard at Santa Rosa some time ago and has been making some substantial improvements this fall.

The Pacific Clay Manufacturing Company, which operates a plant at Corona. Cal., where sewer tile is manufactured principally, has just secured a large contract from the City of Porterville. The order aggregates about 16 miles of various sizes of sewer pipe and is shared with the Corona Pressed Brick & Terra Cotta Co.

C. F. Pratt, 660 Market street, San Francisco, manager of the Golden Gate Brick Company announces that his firm has been appointed selling agents for the Hartford-Faience Co., of Hartford, Conn. This firm has some large contracts on hand for winter delivery.

N. Clark & Sons of East Oakland, Cal., have just secured a contract for architectural terra cotta to be used in Salt Lake, Utah. The plant is in full operation and will continue until the heavy rains set in as some very large contracts are on hand.

Gladding, McBean & Co. are erecting a new terra cotta kiln at the Lincoln plant, and will have it ready for operation next spring.

The Little Falls Fire Clay Company of Tacoma, Wash., has leased land at Bayne and will manufacture fire brick there.

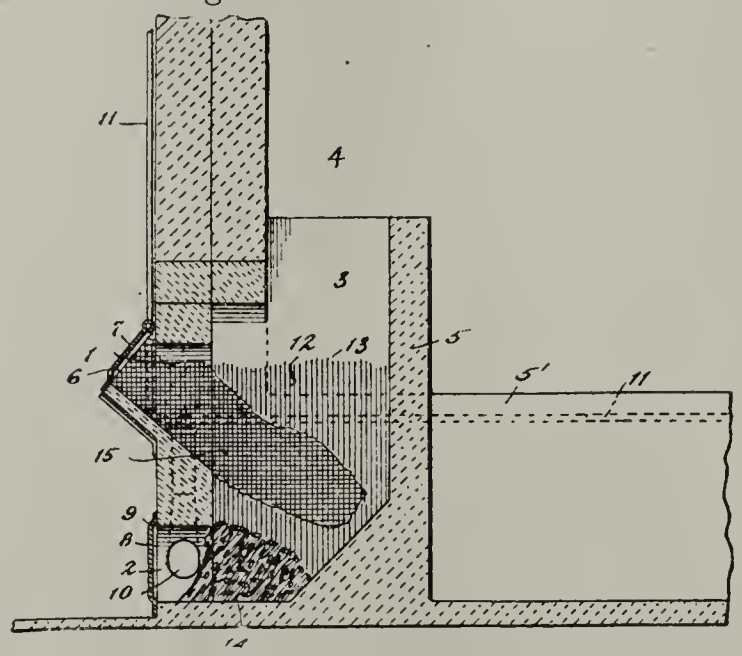
A new brick plant is being erected at Etna, Cal., by Frank Wilson.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

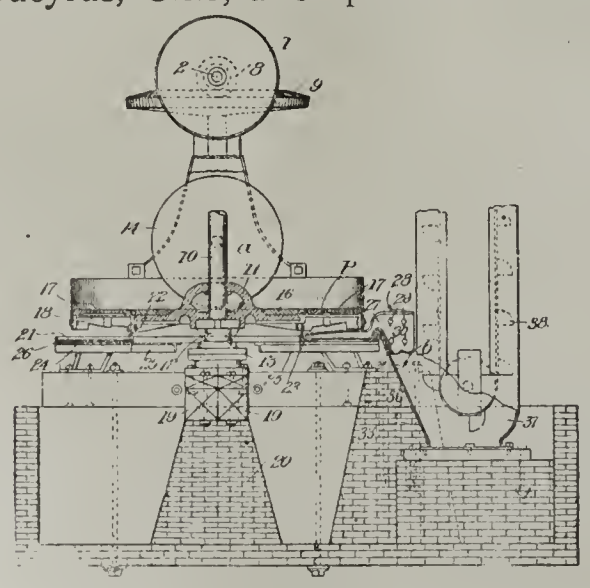
931,645. Method of Firing Furnaces. George L. Prentiss, Montclair, N. J. Filed Sept. 14, 1907. Serial No. 392,898.

The method of firing furnaces consisting in packing with fuel the passage which supplies the burning gases to the heating chamber, in maintaining the fuel so packed in active combustion by a draft through part of the same, withdrawing the ash from the ash pit end of the fuel column, feeding fresh fuel to an intermediate point of the column and tamping the same to maintain the column compact and homogeneous.



The method of firing furnaces consisting in packing with fuel the passage which supplies the burning gases to the heating chamber, maintaining the fuel so packed in active combustion by a draft therethrough, withdrawing the ash from the ash-pit end of the fuel column, feeding fresh fuel to an intermediate point of the column and tamping the same to maintain the column compact and homogeneous.

931,279. Grinding-Mill. William R. Cunningham, Bucyrus, Ohio, assignor to The American Clay Machinery Co., Bucyrus, Ohio, a Corporation. Filed Feb. 27,

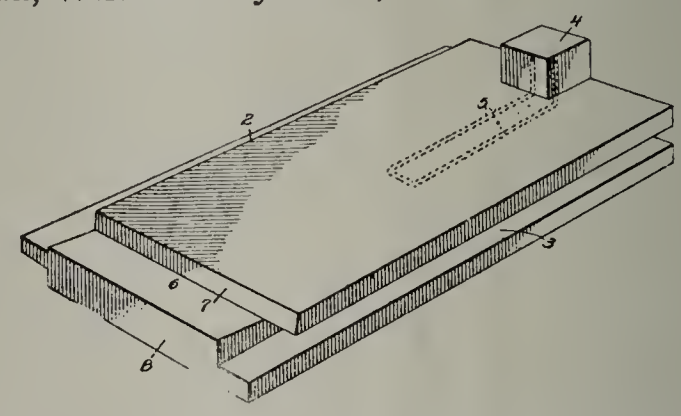


1908. Serial No. 418,093.

In a machine of the character described having a revoluble grinding-pan, a dust-collecting pan suspended below and spaced from the grinding-pan, and connected to the latter so as to revolve therewith, and a stationary scraper projecting from the outside inwardly through the space between the two pans and operable to discharge the ground material outwardly as the pans revolve relative to the scraper.

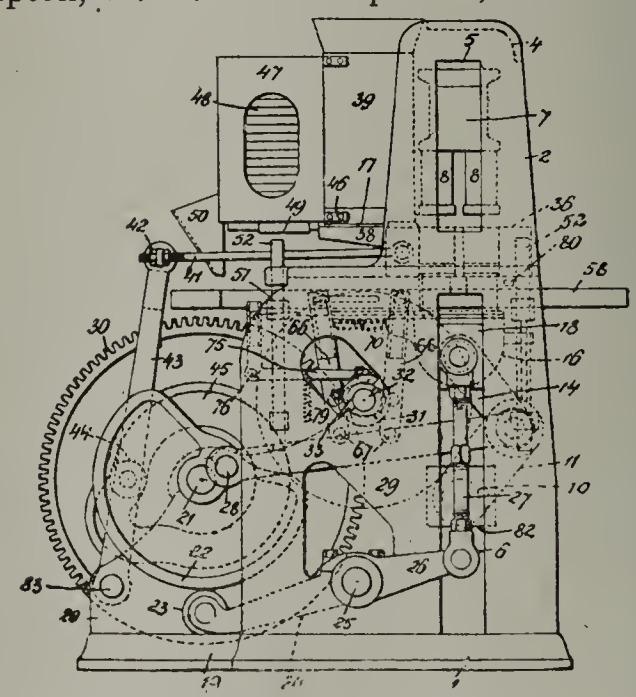
In a machine of the character described the combination with a revoluble grinding-pan, said pan having a screen-surface, of a dust-collecting pan suspended below and spaced from the grinding-pan and connected to the latter so as to revolve therewith, a scraper projecting through the space between the two pans and into the range of travel of the material carried by the second-named pan, a support for the scraper exterior to the pans, and means for adjusting the support in horizontal planes to vary the inclination of the scraper.

931,329. Roofing Shingle or Tile. Fredrich W. Meyer, Merrillan, Wis. Filed June 27, 1908. Serial No. 440,777.



A shingle or tile comprising an oblong rectangular body provided at one side with a longitudinal tongue, and at its opposite side with a longitudinal groove, the rear end of the tile being formed with a depending bearing lug and the forward end of the tile with a bearing shoulder and an overhanging forwardly extending supporting lip or flange, the tongue and upper wall of the groove being coextensive in length with the full length of the tile and the lower wall of the groove terminating in line with and forming a lateral extension of the bearing shoulder.

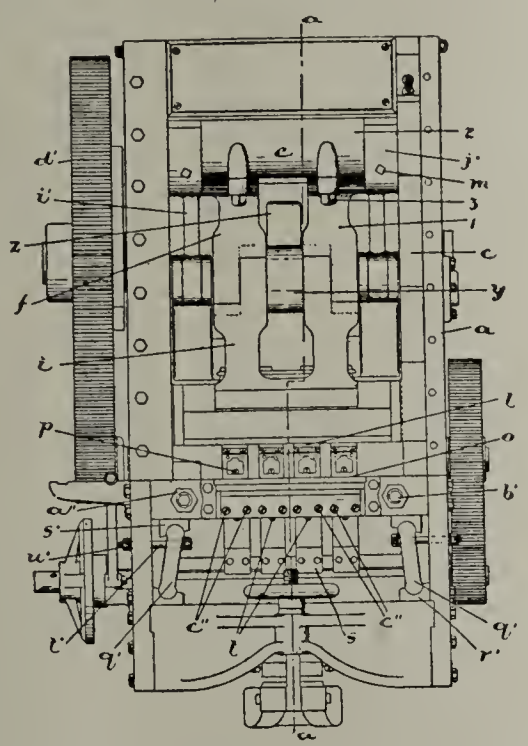
929,981. Machine for Forming Plastic Material. William T. Price, Wheeling, W. Va., assignor, by mesne assignments, to International Brick Machine Company, Binghampton, N. Y. Filed April 22, 1907.



In a molding machine, the combination with a base plate, and slotted side frames carried thereby, of upper plungers movably mounted in said frames, a table movably mounted in said frames, plungers movably supported upon said table, a horizontally movable mold between said plungers, a hopper normally closed by said mold, a pallet magazine carried by said hopper, rails movably supported beneath said mold for supporting and moving said pallets, means carried by said frames for moving said mold to simultaneously receive material from said hopper and move a pallet from said magazine, means carried by said frame for raising and lowering said table and plungers, and means for imparting an oscilating movement to said rails for moving said pallets.

932,674. Brick-Press. Anton Berg and John Berg, Toronto, Ontario, Canada. Filed May 18, 1908. Serial No. 433,511.

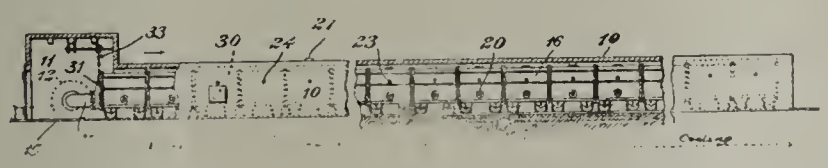
A press comprising a set of plungers, a shaft from which the plungers are suspended, operable means actuating the plungers, side bars suspended from the shaft, a second set of plungers opposed to the first mentioned set of plungers actuated by the side bars, lifting means for the shaft, and adjusting means interposed between the shaft and the lifting means consisting of two members the engaging faces of which are inclined in opposite directions and movable across each other.



A press comprising a toggle shaft, a toggle suspended from the toggle shaft, a set of plungers carried by the toggle, operable means actuating the toggle, side bars suspended from the toggle shaft, a set of plungers actuated by the side bars, lifting means embracing the toggle shaft, and adjusting wedges interposed between the lifting means and the toggle shaft.

933,419. Apparatus for Burning Brick. William B. Chapman, Brooklyn, N. Y. Filed Aug. 15, 1906. Serial No. 330,637. Renewed June 18, 1909. Serial No. 502,967.

An apparatus for burning brick having a relatively stationary gas producer and a tunnel-like kiln movable past the gas producer and adapted to have the gaseous fuel ignited and burned therein.



An apparatus for burning brick having a stationary tunnel, a gas producer located intermediate the ends thereof, a continuous tunnel kiln adapted to move through the outer tunnel and means for conducting gas into the tunnel kiln from the gas producer.

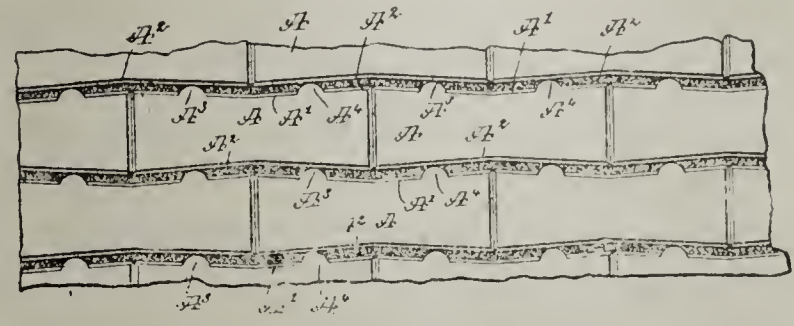
930,575. Process Relating to Refractory Substances. Robert Tripmacher, Schweidnitz, Germany. Filed April 28, 1909. Serial No. 492,671.

The process of binding refractory substances, consisting in treating the same in pulverized condition with a liquid which consists of a saccharine solution, and a chronium compound, in which naphtha is emulsified, substantially as described.

The process of binding refractory substances, consisting in treating the same in pulverized condition with a liquid which consists of a saccharine solution, and chronic acid, in which naphtha is emulsified, substantially as described.

933,521. Paving-Block. David Atherton, Philipsburg, Pa. Filed Nov. 3, 1908. Serial No. 460,810.

A roadway comprising transverse courses of paving blocks, each block having both faces V-shaped, and successive courses breaking joints, one-half of the side of a block in one course fitting a corresponding half of a block in the adjacent row, and vertical spacing ribs on the halves of one side of a block in one course abutting against the smooth halves of adjacent blocks in the next course.

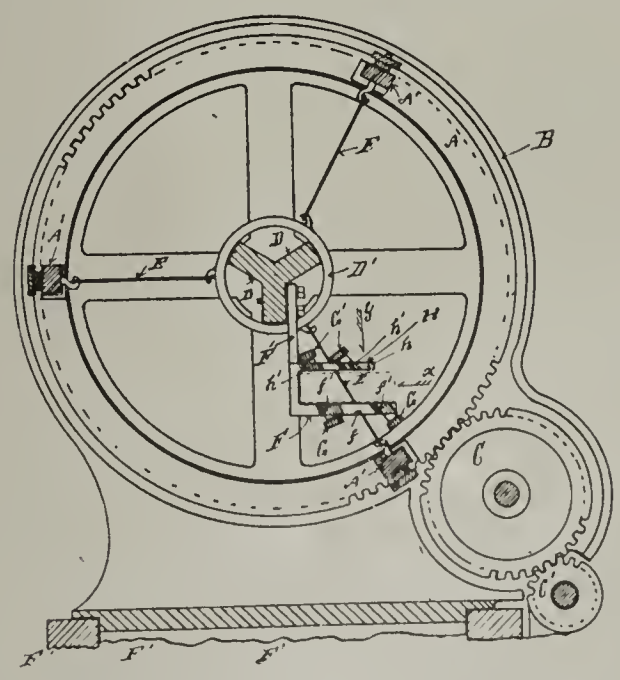


934,710. Manufacturing or Artificial Stone. Anton Brany, Alpha, N. J. Filed Oct. 7, 1908. Serial No. 456,599.

The process of manufacturing artificial stone consisting in employing Portland cement, equal parts of half saturated salt water and saturated lime water, stirring the cement and adding the salt and lime water to the required consistency, molding the mass and allowing the molded mass to crystallize.

The process of manufacturing artificial stone consisting in employing 80 pounds of Portland cement, 20 pounds equal parts of half saturated salt water and saturated lime water, stirring the cement, adding the salt and lime water, molding the mass and allowing the molded mass to crystallize.

933,536. Mechanism for Cutting Wire-Cut Brick. Frank B. Dunn, Conneaut, Ohio, assignor to The Dunn Wire-Cut Lug Brick Company, Conneaut, Ohio, a Corporation of Ohio. Filed Oct. 2, 1907. Serial No. 395,584.



The combination in a machine for wire-cutting brick from a continuously moving column of clay comprised substantially of mechanism operating one or more tensioned cutting wires, a transversely slotted platen upon which the clay-column is supported and through which the tensioned cutting wires pass traveling in unison therewith and with the clay column during the cutting operation, and means in said platen slots for deflecting the cutting wires as they pass through said slots and a column of clay supported on said platen, substantially as set forth.

CLAY RECORD.

PUBLISHED SEMI-MONTHLY BY THE

CLAY RECORD PUBLISHING COMPANY

Ninth Floor, Plymouth Building,
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GEORGE H HARTWELL, EDITOR

SUBSCRIPTIONS

Send One Dollar bill or stamps for United States or Mexico and one dollar fifty cents for all other foreign counties.

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Vol. XXXV. NOVEMBER 30, 1909. No. 10

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

CONVENTIONS

The sixth annual convention of the National Association of Manufacturers of Sandlime Products will be held at Buffalo, N. Y., December 6 and 7, 1909. Headquarters at Hotel Statler. Secretary Fred K. Irvine, Chicago, Ill.

The twenty-ninth annual convention of the Iowa Brick and Tile Association will be held at Des Moines, Ia., January 12, 13 and 14, 1910. Secretary C. B. Platt, Van Meter, Ia.

The twenty-fourth annual convention of the National Brick Manufacturers Association will be held at Pittsburgh, Pa., February 1 to 12, 1910. Headquarters at Hotel Pitt. Secretary T. A. Randall, Indianapolis, Ind.

The twelfth annual convention of the American Ceramic Society will be held at Pittsburgh, Pa., February 6, 7 and 8, 1910. Secretary, Edward Orton, Jr., Columbus, Ohio.

The thirty-second annual convention of the Illinois Clay Manufacturers Association will be held at Champaign, Ill. Secretary Geo. H. Hartwell, Chicago, Ill.

If you have anything you wish to sell to the clay trade, the Clay Record will put it before them as well as any paper in the trade.

"Fire, earthquake or storm has little or no effect upon a sturdy steel frame, properly protected with good brick or fireproofing tile well applied. It is the standard construction of the country, so why not use it until something better is found?"

Put into practice some idea that will increase the receipts.

Do not use the yard measure in counting your progress, but use the inch rule that has the fine fractions on it.

You may some times think that your father is a little old-fashioned, but after a while you will acknowledge that he is the best advisor you have ever had.

Have you thought of renewing your subscription to the Clay Record? This is the time of the year that we would appreciate your order. It costs only one dollar for a whole year.

It is a source of great satisfaction to the boss to know he has dependable employes and that when he gives an order the thing is done so far as further effort on his part is concerned.

A business man may be rated as worth a million, but if he breaks his promises regarding payments or fulfillments of contracts, he will find later on those who deal with him will insist upon cash transactions.

AN IOWA BUSINESS POINTER

If you want to know something about Iowa prosperity and the product for bigger yields from Iowa farmlands ask the tile factory. The tile factories are working every man they can get attempting to supply the vast demand for tile wherewith thousands of acres of unproductive or uncertain land is being brought to full tillage and a full crop every year. Ask the tile man.

He will tell you of hundreds of farmers who are laying hundreds of miles of tile and of other hundreds who would lay other miles if they could get the tile and the labor to dig the ditches wherein to lay it. He will tell of his hard work to sell tile a few years ago and of his present effort to keep this farmer and that waiting for the factory to catch up instead of trying to buy abroad and ship in. And the main reason why the farmer waits is because every other tile-maker is in the same fix as the local men.

That long slough that you remember up in the counties where you shot ducks is gone. A cornfield occupies the ground where you couldn't wade with hip boots a few years ago. The long stretch of sloughy valley that was the abode of innumerable jacksnipe and seemed utterly unfit for farming is now worth a hundred dollars an acre if you can buy an acre of it at any price. It is the best land on the farm. Big drainage ditches have carried away the water, innumerable laterals are draining into the big ditch. The ground that was dear at $20 is now raising corn. It averaged fifty bushels to the acre and he sold it this spring at 70 cents.

Ask the man who makes tile what is doing that will add to the prosperity of the state and the trade for which he merchant is insatiably watching. Ask the man who lays tile how many jobs he has been forced to turn down and count the long snaky curves that tell the story of tile laid and working. Then figure the additional crop at the prices current. It is a business pointer.

OBITUARY

Fred Korff, a pioneer brick manufacturer, while temporarily not in his right mind, committed suicide at his home near Drake, Mo.

Edward Scales, aged 65 years, died at the home of his son, Charles J. Scales of Tottenville, L. I., N. Y., with bright's disease. He had been engaged for the last eight years with the Atlantic Terra Cotta Co.

John Weber, a well known and highly respected citizen of Sayreville, N. J., died at his home after an illness of two days. He was the superintendent of one of the large brick works of Sayreville.

W. H. Corbill, in a fit of despondency, caused by ill health, committed suicide at his home, 411 Colley avenue, Norfolk, Va. He was a well known brick contractor and builder.

FIRE! FIRE!! FIRE!!!

Fire of unknown origin completely destroyed the drying sheds of the Fultonham Brick Co.'s lower plant at Axline, Ohio. The loss is estimated at $2,000. It will be rebuilt at once.

A $5,000 loss was sustained by the North Iowa Brick & Tile Co. by a big drying kiln being burned. The plant was fully covered by insurance. Plant located at Mason City, Ia.

The large sheds over the kilns of the Cary Brick Co.'s plant on Manor avenue, Cohoes, N. Y., became overheated and were destroyed by fire causing $1,000 loss.

Seven horses valued at $1,500 were burned to death in the barns of the Flanagan Bros. Brick Mfg. Co., at Second and Lydia avenue, Kansas City, Mo., besides the loss of the barn.

Fire, which originated in the oil house, completely destroyed the plant of the Hammond Fire Brick Co. at Hammond, W. Va. The loss is estimated at $50,000. The plant will be rebuilt at once.

TWO CHATTANOOGA JUSTICES TO MAKE BRICK IN FLORIDA

A queer coincidence is the fact that two members of the county court are to leave Chattanooga, Tenn., for Florida to embark in the brick business, says the Chattanooga News. These two justices are 'Squires W. M. Parks, of East Chattanooga, in the sixth district, and Thomas Cowart, of Hill City, in the third district. The former is going to Dupont, Fla., and the latter to Jacksonville. Both are to enter the same business, to leave the same day and to go to the same state.

'Squire Parks will return to Chattanooga after putting into operation a brick plant for the W. J. White Manufacturing Company. However, 'Squire Cowart will take up his residence in Florida, it is said.

Mr. Parks is an experienced brickmaker, having established the Tennessee Brick Company, which is one of the largest brick plants in the Chattanooga vicinity. 'Squire Parks has not been actively engaged since his retirement from that company.

Some years ago Mr. Parks spent the winter in Florida, putting in operation a brick plant. Mr. Parks will be gone about two months, at which time he expects to have the new plant fully under way.

ACCIDENTS, DAMAGES, AND LOSSES

After a struggle lasting for several months, the Fort Scott Brick Co., of Fort Scott, Kansas, has gone into involuntary bankruptcy.

The Carnegie Brick & Pottery Co.'s plant was destroyed by an explosion and Ed. Connolly, the engineer in charge, had a narrow escape for his life.

Three men were seriously injured and many others slightly injured by the falling of a kiln wall at the plant of the Collinsville (Okla.) Vitrified Brick & Tile Co.

By a cave-in of a clay bank at the Cary Brick Co.'s plant at Cohoes, N. Y., George Briskin, an employee, was so seriously injured that it is believed he will not recover.

Frederick W. Beardslea has brought suit to enjoin the Vallejo (Cal.) Brick & Tile Co. from disposing of any part of their product, claiming a contract of exclusive selling privilege.

The Clayton C. Bourne Brick Co., Dutchess Junction, N. Y., has been sued for damages for the injury of one, George Zejak, who allowed a part of a brick kiln to fall upon him while working for the company.

OHIO LEADS IN POTTERY MAKING

Last year pottery workers in the United States manufactured $757,900 worth of the ordinary earthen flower pots which are to be found leaking in almost every household in the country throughout the winter season.

Considering the red earthen flower pots as they are known to most householders in varying sizes, numbers, and degrees of fragility anywhere from the basement to the attic, this total doesn't look up to much for one year's production. But these are manufacturers' prices quoted by the National Geological Survey, which remarks that the red flower pot is about the cheapest thing that is turned out in burnt clay, anyhow.

As to pottery manufacture in 1908, even with a falling off of nearly 17 per cent from 1907, it was valued at $25,135,555 for the twelve months, Trenton, N. J., turning out $5,649,472 of this total, and East Liverpool, O., producing $4,050,384 worth of the many varieties of pottery ranging from a costly porcelain bathtub to the simple little red flower pot with the round hole in the bottom.

In the production of pottery of all kinds Ohio takes the lead of all the states, with New Jersey second and West Virginia third. However, thirty-seven states of the union have made reports on pottery manufactures. How much Ohio leads in the industry may be seen in the fact that in 1908 it turned out almost $11,000,000 of the total pottery product.

Falling off as the production did in 1908, still the domestic product supplied 72.54 per cent of the domestic consumption of the United States—making a record in this respect—while on the other hand $983,760 worth of pottery was exported. The total imports for the year fell off 22.54 per cent from 1907, showing a total loss of $3,062,821 for 1908, most of which was in white tableware. As the domestic loss in production largely was in this same white tableware, the inference is that the hired girl broke immensely fewer dishes last year than could have been expected.

MISSOURI 1908-MADE BRICK WOULD CIRCLE THE EARTH.

Missouri kilns manufactured 369,467,000 building brick in 1908, enough, if laid end to end, to circle the earth and leave a remainder sufficiently large to lay eight courses across the continent from New York to San Francisco, according to figures prepared by Archa B. Edmondston, statistician for the State Bureau of Labor Statistics. Their value was $3,811,588.

The stone and clay products of Missouri for last year were valued at $8,904,013, which includes brick, cement, lime, tile and fire proofing.

Missouri ranks fifth in the production of sand and gravel, according to the Labor Bureau, and produced $726,984 worth.

The following table shows the amount of stone and clay products manufactured, their value, and the output and value of the sand and gravel:

Stone and Clay Products.

Commodity and quantity.	Value.
Brick, common, 219,526,000	$1,465,311
Brick, vitrified, 56,805,000	647,097
Front brick, 32,136,000	356,758
Ornamental brick	25,025
Drain tile	76,865
Sewer pipe	962,116
Fireproofing	105,136
Fire brick, 60,544,000	1,357,387
Pottery, stoneware	66,408
Miscellaneous products	569,343
Lime, 167,060 tons	701,321
Cement, 2,929,504 barrels	2,571,236
Grand total value, all stone and clay products	$8,904,013

Sand and Gravel Output.

Commodity and quantity.	Value.
Glass sand, 111.517 tons	$ 83,106
Molding sand, 41,719 tons	21,640
Building sand, 1,767,794 tons	427,050
Engine sand, 12,500 tons	2,500
Fire sand, 2,820 tons	996
Furnace sand, 23,300 tons	16,655
Miscellaneous sand, 42,364 tons	27,648
Gravel, 586,144 tons	147,389
Grand total, 2,588,158 tons	$726,984

AMERICAN CLAY PLANT PLIES BRISK TRADE IN DULL SEASON

One of the busiest plants in Terre Haute, Ind., at present is the American clay works. A large force is kept constantly on duty and considering that this is usually the dull season for clay workers, the company is doing an enormous amount of business. An average of five or six carloads of fireproof roofing is being sent out from the factory every day. This makes an average of from thirty-five to forty carloads a week, which is equal to an average output of from 700 to 800 tons.

The prosperity boom which struck this city appears to have been particularly favorable to the American clay works. The flood of business has carried the plant on past the critical time and does not even permit of the usual semi-idle season of the late fall. It is seldom that the firm has put out more than a weekly average of 800 tons of this fireproof roofing, even during the most rushing season, and the fact that the plant is holding up to this standard at present is regarded as an especially good indication for the coming year's business.

ATLAS ELECTRIC LOCOMOTIVES, CARS AND TRUCKS

During the last decade, owing to the great necessity of economical production in industrial plants, it has become necessary for the producer to look towards a more efficient and economical manner of transporting both the raw and finished material about the plant.

As almost all industrial plants are now using electric power, in some form or another, it is to this source that the producer must look for a solution of his problem; hence the electric locomotive.

The general cleanliness and the absence of all smoke and gases makes their use particularly desirable and especially so around buildings.

The Electric Locomotive for the same service is lighter and more compact than a steam locomotive. It can be handled by a single, comparatively unskilled operator, is always ready for service and consumes no fuel when idle.

A small Electric Locomotive and one man can in a few hours accomplish the same amount of work that ordinarily would require several men an entire day. The expense for power furnished a 10-ton locomotive, based on a rate of five cents per K. W. hour, will not average much more than 30 or 40 cents a day.

Electric Locomotives can be divided into three classes, viz., 1. Plain Storage Battery. 2. Combination Storage Battery and Trolley or Third Rail. 3. Plain Trolley or Third Rail.

If you are interested in Electric Locomotives write at once to the Atlas Car & Manufacturing Co. at Cleveland, Ohio, asking them for their Bulletin No. 1090 on Electric Locomotives, Cars and Trucks.

RECEIVES NEW LOCOMOTIVE WITH WHICH COMPANY WILL HAUL ITS CLAY TO FACTORY

The Hancock Brick and Tile Company, Findlay, Ohio, is branching out some. For a long time the company has been hauling, by wagons, the clay used for the manufacture of brick and tile, from a forty acre tract recently purchased in Marion township, a portion of the old Henry Byal farm, a distance of two miles or more, but the company, during the past season, erected a railroad leading to the farm.

Hereafter the clay will be hauled over this miniature railway, the motive power being steam, as an eight-ton locomotive has been purchased and placed on the track. The addition of this track and engine to the property of the company will result in a great increase in product of the factory. The company has been greatly handicapped for a year or two by its inability to fill orders rapidly enough. This state of affairs will not exist in the future.

THE HENDRICK'S COMMERCIAL REGISTER OF THE U. S. A.

The Hendricks Register is issued annually by the S. E. Hendricks Co., 74 Lafayette street, New York. It is a register for the buyer and seller, and contains over 350,000 names and addresses of American manufacturers, classified under 35,774 heads representing every machine, material, tool, apparatus and specially required in the Architectural, engineering, mechanical, electrical, manufacturing, railroad, mine, mill, quarrying and all kindred industries embracing everything.

The book contains over 1,300 pages, and costs $10.00 per issue express charges prepaid from New York. It contains a complete list for building and construction, contractors, power transmission, heating and ventilating, municipal work, hardware, machinery and many other very valuable mailing lists of the entire country. Send for a prospectus, which includes index of contents.

ROME BRICK WORKS CHANGES HANDS

The plant of the Morrison-Trammell Brick Company, Rome, Ga., has been purchased by D. B. Hamilton, Jr., and Charles C. Harper, who have taken charge and commence the work of making repairs and installing new machinery, which will greatly enlarge the capacity of the plant. D. B. Hamilton, Jr., is in active charge as manager.

The purchase followed the dismissal of bankruptcy proceedings against the Morrison-Trammell Company. The firm settled with its creditors for 60 cents on the dollar to unsecured creditors, and full payment to those secured. Judge W. T. Newman has signed an order dismissing the case from the United States court. Immediately afterwards preliminary negotiations for the purchase of the plant, which had been in progress for several days, were closed up.

It is the purpose of Messrs. Hamilton and Harper to overhaul the present plant and to install new machinery of the latest approved type. Within thirty days they will be able to turn out sewer pipe of any size, and all kinds of brick. Experts who have examined the clay on the property of the company state that it is the best south of the Ohio river for the purpose of making sewer-pipe. All indications point to a wide sale of the product, and for the immediate success of the new company, which will shortly be incorporated as the Standard Sewer Pipe Company.

Messrs. Morrison and Trammell and associates will build a new yard on the west side of town and will soon be making brick for their trade. Both parties are well and favorably known to the trade.

TROJANS ABSORB BRICK COMPANY

The plant of the Dover Fire Brick Company at Gleaston, Pa., has been taken over by Trojans, who have absorbed most of the capital stock to the amount of $150,000. Control of the stock was secured a month ago, but the business was not passed until a few days ago, when the stock was taken up. The plant has had an output capacity of 30,000 brick a day, but under the new control it will be enlarged and its product greatly increased. The company paid, it is said, one per cent a month dividend. The directors of the new company are William C. Geer, William Sleicher and H. S. McLeod, of Troy; Frank D. Halstead, formerly of this city, now of Lockhaven, Pa., and Irving Gleason, of Gleaston, Pa., a member of the old company. The officers of the new company are: William C. Geer, president; William Sleicher, vice president; Harry S. Sleicher, secretary and treasurer.

CLAY PRODUCTS COMPANY AT FORT DODGE PLAN UNIQUE RAILWAY

Fort Dodge, Ia., Nov. 23.—A unique improvement for any city is to be installed here at once by the Plymouth Clay Products Company, in the form of an aerial tramway, one span of which will be 600 feet across the river. Others of less length will complete the tram which, entire, will be fully a mile in length, reaching from one bluff, across the Des Moines, its wide valley clearing the other bluff, and circling a big shed which will hold ten thousand tons of clay.

The tramway is being built as a method of transferring timber, clay, gypsum and coal from a piece of land belonging to the company, to the company manufactories. The land was bought for farm land sometime ago and develops finest quality clay and gypsum, a good vein of coal which will be used to operate the mill and factory and has 150 acres of timber which will be used for crating sewer pipe. The timber is valued at $15,000.

The tramway will be equipped with passenger cars as well as freight cars. The latter will carry 1,500 pounds of material and travel at 300 feet per minute. It has steel rails, wire cables and is suspended on towers from twelve to sixty feet in height. The right of way is already purchased and is 25 feet in width.

MILWAUKEE TO HAVE A BIG SILICA QUARTZ MILL

Milwaukee probably is to have a large plant for the reduction of quartz into pure silica. It will be only the third of its kind in the United States.

The Michigan Quartz Silica Company, which alraedy has a large plant on its mine near Ishpeming, Mich., has secured an option on the Milwaukee Cement Company's plants and probably will soon sign a lease for one of them. The company also is considering a plant in Chicago, however.

Directors of the company have determined to locate the general offices in Milwaukee and a large suite has been rented in the new engineering building now in process of construction on Second street.

The proposed Milwaukee plant will turn out the greater part of the company's product, although the Ishpeming plant will be operated as usual. The new plant will employ about fifty men and will be equipped with the most modern machinery.

The Michigan Quartz Silica Company is capitalized at $500,000. The greater part of its stock is owned in Milwaukee and two of its officers, Assistant Treasurer Charles E. Miller and General Sales Manager Carl F. Keck, are Milwaukeeans. Mr. Keck also is manager of the Milwaukee office.

Milwaukee was favored for the location of the new plant because of its importance and convenience as a shipping center, because better labor can be obtained here and because so much heavy machinery is made here.

Reduction of quartz into silica is a new, but growing industry. Aside from the Michigan company's plant at Ishpeming, there is but one other of its kind in the country—in Massachusetts.

Great carloads of white quartz from the company's mine will be shipped direct to the Milwaukee plant. Here the glistening white crystals will be run through machinery until it is reduced to the finest of white powders.

Silica powder is chiefly used by paint manufacturers. It is a valuable ingredient in paint, but particularly in wood filler. Silica always is crystalline and therefore the tiny particles cling to wood and imbed themselves in it. Coarser grades of silica powder are used in pottery and some soaps. The powder is made up and shipped in bags, like salt.

Officers of the Michigan Quartz Silica Company are: President, Edward Copps, Ishpeming; vice president, Otto Eger, Ishpeming; secretary, J. O. Gingrass, Ishpeming; treasurer, William M. Noon, Marquette, Mich.; assistant treasurer, C. E. Miller, Milwaukee; general sales manager and manager of the Milwaukee office, C. F. Keck, Milwaukee.

GETS DAMAGE IN SUIT AGAINST LABOR UNION

A verdict for $2,233 was returned by a jury in favor of John D. Carbaugh, Fort Smith, Ark., against James Reddick and E. J. Klein, of the Bricklayers' Union No. 8, Fort Smith, and Jacob Meir and F. M. McCalley, of Union No. 14, in Judge Hon's court.

Carbaugh is a local contractor and manufacturer. He declared the union had boycotted his product because he refused to employ union labor. In the course of his testimony he cited several examples in which he claimed he was kept from getting work by the action of the unions. This is the first time in the history of the Sebastian county courts where a verdict of this character was rendered. It is also said that the verdict is the only one of its kind in Arkansas. It is likely that the case will be appealed.

When the case first went to trial the plaintiff tried to have Judge Hon hold union men ineligible to serve as jurors, on the ground that union men would be prejudiced against his cause. The court refused to do so and declared union or non-union men could serve if they were accepted.

THE AMERICAN CLAY CO. BUYS THE NATIONAL CO.

The American Clay Machinery Company of Bucyrus and Willoughby, Ohio, have purchased the brick press interests of the National Brick Machinery Co. of Chicago. The latter concern manufactured and sold a line of dry press brick machinery, making a specialty of the National-Simpson Dry Press, the invention of Mr. P. L. Simpson, who is a pioneer in this branch of the brick machinery line.

About the time of the purchase, The American Clay Machinery Co. also opened up a Chicago office at 814 Chamber of Commerce Bldg. and put Mr. H. S. Simpson in charge of this branch. Mr. Simpson is a son of P. L. Simpson and has had considerable experience in the brick and brick machinery business. He was formerly secretary and treasurer of the National Brick Machinery Co., and is exceedingly well fitted to manage the office for the American Clay Machinery Co. He is well and favorably known throughout the country as an honest and energetic young man who is well able to handle in a very satisfactory manner all problems confronting the brick manufacturer and at the same time render his customers prompt and efficient service when called upon to do so.

Mr. P. L. Simpson is also connected with the American Clay Machinery Co., and has his headquarters in the Chicago office. It is unnecessary to speak further of Mr. Simpson, Sr., as he has been "in harness" so many years he is known the country over as being a practical and experienced man, fully acquainted with all the "ins and outs" of the brick and clay working business.

The American Clay Machinery Co. has certainly acquired two valuable men and also added a line of machinery to their already large list, so that they are in a position to take care of all requirements of present and prospective brickmakers.

ALBERTA CLAY PRODUCTS COMPANY BUILDING NEW PLANT

The Alberta Clay Products Company have started the building of their enormous plant at Medicine Hat, Alberta, Canada. The officers are James Campbell, President; G. W. Markham, Vice-President and Warren Overpaek, Treasurer and General Manager. None of these gentlemen need an introduction to the clay trade as they are old and reliable hands at it.

A White dry press, manufactured by the Chicago Brick Machinery Company, Chicago, Illinois, is now being installed and will be ready to make brick in a few days.

Soon after New Years they expect to begin the main buildings, the foundations of which are already in. The boiler house will be 48x48 feet, and will house three high pressure boilers, developing 450 horse power, adjoining will be the engine room 30x48 feet, in which will be the Corliss engine, the pumps, and the dynamo for the electric light of the plant.

The clay room for the storage of clay will be 140x48 feet two stories high. The machine room will be 50x60 feet, three stories high and will contain the three wet pans and one dry pan and the sewer pipe machinery.

The dry press room will be 40x40 feet, three stories high and will contain a dry pan and dry press machinery. In the dryer will be a power elevator and gravity elevators. The building will be heated with steam from the exhaust and live steam by night. The main building will be 256x80 and four stories high.

When completed they will manufacture sewer pipe, drain pipe, wall coping, common and dry pressed brick and other clay products and it will be one of the best plants in western Canada.

SPECIAL REPORT OF BRICK AND CEMENT WORKS IN HUNGARY

The report of Special Agent Capt. Godfrey L. Carden in the Government service describes his observations at the Resicza works in Hungary, says: "In the mountains of southeastern Hungary, in the V indicated by the Servian and Roumanian frontier lines, is Resicza. It is a small place, so far as cities go, but it represents in its population one of the most interesting iron and steel works in Europe. What Krupp is to Germany and Le Creusot to France, so Resicza is to Hungary. A grade of steel is being turned out in these Hungarian works the equal, it is claimed, of the best in the world."

Resicza is making all its own fire brick and has a very complete plant for this industry. There is a Robbins type of belt conveyor in service in the brickworks. The gas used for drying the brick comes from two producers of the type of the Morgan Construction Company. These producers were built by Resicza. Women are employed to a large extent at the brickworks. I observed that blast-furnace slag is being worked up into brick. The slag is granulated by water and is mixed with lime and pressed into brick. These slag brick are air dried for a period of about six months and later are used for building purposes. They are cheaper than burnt brick, but naturally are not as good, since the mechanical strength is inferior. I observed one Worthington pump at the brickworks, but aside from this pump the equipment is largely German. Most of the brickwork's equipment came from Osnabruck. Beyond the brickworks, and nearer to the water-power plant, are a number of dwellings which have been erected by Resicza for the use of the workmen. These houses are mostly provided with three rooms and kitchen and are rented, I understand, for about 12 crowns ($2.44) per month.

The annual output of the brick kilns in Resicza is 1,800 tons of tile and nearly 1,000 tons of fire brick. As high as 4,000,000 brick are made annually from granulated blast furnace slag. In addition there is a brick kiln which the company is operating in Roman-Bogsan, annually producing an average of nearly 3,000,000 building brick.

The company's lime-kilns in Kolcza and Cravicza have an annual output, respectively, of 6,000 and 8,000 tons of burnt lime.

In Oravicza a cement factory of the same company is producing annually about 2,500 tons of cement, and in Cravicza there is a petroleum refinery and machine factory having an annual output of from 6,000 to 8,000 tons.

THE AMERICAN PULVERIZER DOING GOOD WORK IN IOWA

William H. Shaw, the well known superintendent of the Grinnell (Ia.) Brick & Tile Co. plant says, "That the American Pulverizer, made by the American Pulverizer Co. of St. Louis, Mo., is a godsend to the clay worker—one that will do the work at all times of the year and give quality and satisfaction. That it has a dry pan skinned in a dozen ways."

The American Ring-Hammer Pulverizer will pulverize anything you want to throw into it, be it broken or unbroken tile or brick, refuse sewer pipe, shale, limestone, etc. This machine has been working over five months and has more than given satisfaction. No signs of wear of rings, hammers or grate bars. It runs very easily and almost noiseless. Present indications lead us to believe that one set of rings, hammers and bars will last two years without any repair expense.

Owing to the manner in which the grate bars are installed, the machine can be adjusted for many kinds of work. We are grinding broken tile, brick, cinders from the boiler, and frequently throw in dry and green clay with this refuse."

MR. KACHELMACHER RETIRES FROM BUSINESS AND IS SUCCEEDED BY THE VICE-PRESIDENT

N. L. C. Kachelmacher, of Columbus, Ohio, has resigned the Presidency of the Columbus & Hocking Coal & Iron Co., and in all probabilities will go abroad in order to restore his health.

In July, 1904, Mr. Kachelmacher went to Columbus and took charge of the Company's affairs. At that time the company enjoyed a fair business, but soon after, when Mr. Kachelmacher had matters well in hand the business increased by leaps and bounds and the old company once again resumed its place as leader in the Hocking Field which title it enjoyed before the big coal strike in 1884.

Possessed with boundless energy, Mr. Kachelmacher forsaw in the clay deposits on the company's properties great possibilities, and decided on an expert examination of the quality and quantity of the deposits. The company's enormous holdings were systematically drilled and samples of the various seams extracted. The results even surpassed expectations, and the various ceramic products made at this experimental stage convinced Mr. Kachelmacher and his corps of experts that they had for their future profit the finest clay in the world. A subsidiary company was formed, and from this first investigation has grown the plant at Kachelmacher, which is the most modern in the world. All the history of thousands of years of brick-making is behind it and it stands today as the most perfect example of the most ancient craft turned into an exact science by the use of brains and modern machinery. One of the most curious things in connection with the great plant is that its name "Kachelmacher," taken from the enterprising originator, whose family is the only one bearing that patronymic means "Brickmaker."

For the past three years Mr. Kachelmacher has devoted much of his attention to the completion of the brick plant which started the manufacturing of high grade facing brick in the fall of 1908, and under his sturdy guidance has brought to the old company a world-wide reputation as manufacturers of brick.

The famous "Kachelmacher" brick has won universal favor throughout the country and the demand for this brick has been so great that the company has been forced to install two extra brick machines, and is now busily engaged in erecting another twenty-chamber continuous kiln. The capacity of the plant, after the completion of the present construction work will then be 250,000 facing brick per day.

Henry Stanley Haskins of New York, former vice-president has been elected president to succeed Mr. Kachelmacher.

HISTORY OF THE CLAY WORKING INDUSTRY

The history of the Clay working industry in the United States by Heinrich Ries, Ph. D., is the latest addition to the clay manufacturers library. It is an 8vo, 270 page, well illustrated book and costs $2.50 net.

It treats on the history of the country by states, as only such noted men as Prof. Ries can describe.

John Wiley & Sons, well known book publishers of New York city, are the publishers and can furnish you a copy, or you can purchase them from the CLAY RECORD, whichever way you see fit.

EXPLOSION WRECKS THE CARNEGIE TERRA COTTA PLANT

Stockton, Cal., November 23.—Information reached here that a second explosion at the Carnegie Terra Cotta Brick & Pottery Company plant wrecked the terra cotta plant and probably fatally burned Ed. Connolly. The officers of the plant again made a most strenuous effort to suppress the news of the accident, following as it did on the heels of the boiler explosion of last Sunday, in which John McCorkill and Mrs. McDermott were dangerously injured.

Ed. Connolly, the engineer in charge at the terra cotta works, walked around the boilers in search of the fireman, and as he passed the front of one of the furnaces there was a terrific explosion of gas that had accumulated under the three boilers. The building was a sheet of flames in a few seconds and the entire plant was destroyed. Connolly was thrown to one side and terribly burned, but managed to stagger to his feet and get outside of the structure before losing consciousness.

This completely wrecks two of the three plants at Carnegie, the pottery department some two and a half miles away being the only one left intact. The loss will be a heavy one as the machinery is quite costly. The company is making an effort to secure boilers to start up again as it has large contracts for terra cotta to be filled. One of the boilers of the brick plant still remains on the side hill 200 feet above and 500 feet from the building from which it was blown. The wreckage was strewn around the vicinity for a quarter of a mile in every direction.

MINNESOTA WANTS MORE BRICK PLANTS

The wonderful growth and development of Minneapolis, Minn., makes the city an ideal location for brickmaking plants.

Minneapolis has ten brickyards, manufacturing almost one-fourth of the entire output of the state of Minnesota. The companies are capitalized at about $350,000 and employ about 900 men during the busy seasons of the year. The monthly payroll amounts to approximately $67,500.

With building permits mounting up close to the million mark every month there is ample market for all the brick that can be turned out. The total output during the past year will be in the neighborhood of 40,000,000 brick with a valuation of about $300,000.

FEED WATER FILTRATION

A new and greatly enlarged edition of "Feed Water Filtration" is being distributed gratis by James Beggs & Co., 109 Liberty St., New York. This book explains how oil, dirt, etc., get into feed water, what damage they do within the boilers, and how to remove such impurities before this can occur. It tells how water of condensation and returns from heating systems may safely be used to cut down the coal and water bills and it explains the advantages and disadvantages of various methods of filtration. Numerous instances are cited where filtration through terry cloth at the last point in the line before water enters the boilers has proven successful after other methods have failed. The Blackburn-Smith Feed Water Filter and Grease Extractor is described in detail. Engineers will find this book well worth writing for.

Haigh's New System of Continuous Kiln Arranged to Suit all Locations

These Kilns can be seen burning Roofing Tile, Drain Tile, Dry Pressed Facing, Fire, Paving and Common Building Brick

Points of Superiority: Cheapness in construction. Easy to understaud and oper te. Perfectly tree from any nuisance. Will save more than one-half of the fuel used on other Kilns Specially adapted for Utilizing Waste Heat for Drying Purposes, and which is being done most successfully

Address, H. HAIGH, Catskill, N. Y.

MISCELLANEOUS ITEMS

Wauseon, Ohio, has a new $10,000 tile works.

The Crush (Texas) Brick & Tile Co. have filed proof of final payment of the capital stock.

The Kalona (Ia.) Brick & Tile Co. will start the enlarging of their plant in the near future.

G. W. Oaks of Columbus Junction, Iowa, has sold his brick and tile factory to Clifford Long of Washington, Iowa.

The Plass Bros. are constructing a brick kiln in which to commence the manufacture of fire proof brick at Elgin, Oregon.

The Worlds Mfg. Co., R. F. D. No. 2, Box 51, Hazelhurst, Ga., wants prices on brick making machinery.

The manufacture of brick has commenced at Alturas, Modoc Co., Calif., and its success has already been demonstrated.

George Sackriter, Mahomet, Ill., is dismanteling his brick making plant. He has been engaged in the business there for 30 years.

The Bartlett Brick Co.'s plants at Hudson and Roseton, N. Y., were sold to Senator John B. Rose and added to the Rose chain of brick works.

The Crawfordsville (Ind.) Shale Brick Co. has increased its capital stock from $25,000 to $50,000 and will use the increase to improve the plant.

John Devlin of Iola, Kansas, is considering the building of a brick plant at Dewey, Okla. The Dewey Commercial Club are working for the plant.

D. N. Lanyon, of Hillsdale, Ind., has sold his interest in the Hillsdale Fire Brick & Clay Works to the W. L. Raynes Co., who will operate the plant in the future.

An up-to-date fire brick works is to be built at Worthy (Mail Newport), on the C. & E. I. Ry., four miles south of Newport, Ind., by D. N. Lanyon of Hillsdale, Ind.

The Tyro (Kansas) Brick Works, A. C. Darrow, manager, is making extensive improvements to the plant to meet the increasing demands. He will put in a large steam shovel.

The Eureka Fire Brick Co., Mt. Braddock, Pa., is preparing to increase the capacity of the plant by putting in a new shape floor. The company has orders for three months ahead.

The Minnesota Farmers' Brick & Tile Co., Austin, Minn., have started the construction of a $400,000 tile plant. The Barr plant is included in the purchase of land by the new company.

The Peerless Tile & Mfg. Co., Union City, Ind., has been incorporated with $15,000 capital stock. The president is J. J. Dowling, vice-president Addison Steele, secretary J. R. Moffett and J. A. Shockney, secretary.

What is generally known as the Paul Broquet Brick Works at Norton, Kansas, has been bought by G. G. Guthrie upon whose land the plant stands.

Catalogue "B" of the Union Steam Pump Co., Battle Creek, Mich., is just off the press. Anyone wanting to know about air compressors should send for one at once.

The Norfolk (Va.) Brick & Tile Co. has been incorporated at Charleston, W. Va., with $500,000 capital stock. The incorporators are: Delmar Lincoln, John Lewis, W. E. Moore and others, of Charleston.

The Drake (Ill.) Clay Co. has been incorporated with $100,000 capital stock to manufacture and deal in clay and clay products. Incorporators are Wm. S. Porter, J. T. Hanley and Thomas S. Ford.

J. E. Martin, owner of the Montpelier (Ind.) Tile Works, in southwest part of the town, is making arrangements to greatly enlarge the capacity of the plant. He will use waste heat for drying and add more kilns.

The Garrison Brick & Tile Works at Garrison, Iowa, have been closed down for the season, selling all their product excepting 15 carloads to local parties. They are considering the increasing of facilities for the new year.

The Kenilworth (W. Va.) Brick Co. has made a $50,000 mortgage bond issue on their plant which is the first step taken by John Porter towards extensive improvements to be made to his brick concerns in Hancock County, W. Va.

The Duffney Brick Co., Mechanicsville, N. Y., has let the contract to Wm. D. Tweedy, to construct its brick plant on the site of the former Best Brick Co., one-half mile east of Mechanicsville. He has started the work with a large force of men.

Machinery has arrived at Jacksonville, Ill., for the new brick and tile plant which is to be built on Henry St., by J. N. Hairgrove of Virden and E. T. Harrison of Waverly. The company will be incorporated under the Jacksonville Tile Co.

NOTICE

The Trade Mark

TAPESTRY

is registered in the U. S. Patent Office and is our exclusive property It brands our best burned clay products. All manufacturers and dealers, except those selling our goods, are warned against infringement.

Boston **FISKE & CO., Inc.,** New York

DIRECT HEAT

DRYERS

FOR

BANK SAND
GLASS SAND
ROCK, CLAY
COAL, ETC.

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue W. C.

AMERICAN PROCESS CO.,
68 William St. **NEW YORK CITY**

The Castanea (Pa.) Brick & Tile Co. will enlarge their plant by adding improvements and machinery to make paving brick and hollow tile.

W. F. Crow of Benton, Ill., has been secured as manager of the Alsey (Ill.) Brick & Tile Co.'s works, and five new kilns are now being erected.

The Portage Silica Sand & Gravel Co. has purchased the plant of the Leavittsburg (Ohio) Brick & Tile Co., and will soon take possession and operate the plant.

The Stark Electric Railway Co. located a deposit of excellent fire clay upon their Lake Park, (mail Canton) Ohio property while excavating for a foundation for a new engine.

James Thomas and S. R. Wolfe have purchased a stiff mud outfit and will establish a plant just south of the Edward Miner Brick Works at Lewistown, Ill., using shale to make brick.

The Robinson Clay Products Co., Akron, Ohio, during the coming spring will erect a mammoth brick plant about a mile north of Strasburg, Ohio, that will give employment to 350 men.

The Corwith (Ia.) Brick & Tile Co. have decided to rebuild their brick and tile works under the old articles of incorporation, which was $20,000. Mr. Holdridge is the principle owner.

The New Superior Brick Co., Rockford, Ill., has been incorporated with $25,000 capital stock. The incorporators are: John E. Myers, W. W. Sawyer and E. W. Baker. They will build a plant on the site of the old Superior Brick Co.

The Dodd Town Site Co., Dodd City, Marion Co., Ark., has been incorporated and will develop the lands, and manufacture brick. A. F. Johnson of Springfield, Mo., is the general manager and P. B. Campbell of Harrison, Ark., assistant manager.

The Central Jersey Improvement Co., Perth Amboy, N. J., has been incorporated with $125,000 capital stock, to mine clay and sand and deal in brick and building materials. The incorporators are: Herman Philo, Ben. Goldberger and Isaac B. Esberg.

The Municipal Tile Works at Natchez, Miss., has been started again by street commissioner Rutherford, after being idle for several months, they make tile from 12 to 24 inches, and they cost 50 per cent less than if they were obliged to buy them.

The Diamond City Brick Co., Wilkes-Barre, Pa., a $60,000 corporation, has elected the following officers: Wm. H. Amesbury, president; John J. Ruckers, vice-president; Peter H. Kehoe, treasurer; Daniel H. Evans, secretary, and Arthur Root, general manager. A 20-year lease has been secured on the Lueder farm at Buttonwood.

The West Virginia Clay Products Co., Charleston, W. Va., has been incorporated with $200,000 capital stock.

Emmons Bros., of Meridian, Miss., wants information on brick and tile machinery, especially for tile drainage.

Hon. Charles Moulton is having tests made of clays and expects to build a brick and tile plant at Lucasville, Ohio.

A new 250 h.p. engine has just been placed in operation at the Trinidad (Col.) Brick & Tile Works; this doubles the capacity of the plant.

J. H. Zacharias, of Stroudsburg, Pa., has finished making brick for the season. He expects to increase the capacity of the plant in the spring.

Simon Kline, the veteran brick maker at West Reading, Pa., is improving his plant again. He operates with 18 men making over 6,000,000 brick yearly.

The Electric City Brick Co., Augusta, Ga., has been inporporated with $25,000 capital stock by J. H. McKenzie, W. J. Burnside and J. E. Brown.

Batdorf & Co., Burlington, Kansas, have built a new kiln at their plant which has greatly increased their capacity and improved the quality of ware. It cost $1,800.

The drouth in Oklahoma, which caused many brick plants to shut down on account of water, and the drilling for gas suspended for want of moisture, has been broken.

F. M. Derrickson, who has been connected with the Corry (Pa.) Brick & Tile Co. since its organization, has severed his connections with the firm and moved to Kenton, Ohio.

The Pardue-Warmann Brick Works, Eden, (mail Clayton) Mo., has been incorporated with $16,000 capital stock by J. P. Pardue, M. Pardue, William H. Warmann and others.

W. J. Mitchell has opened up a yard to make brick at Imperial, Cal., on account of the high prices charged by the outside brick makers, and has secured Joe Rathburn to make the brick.

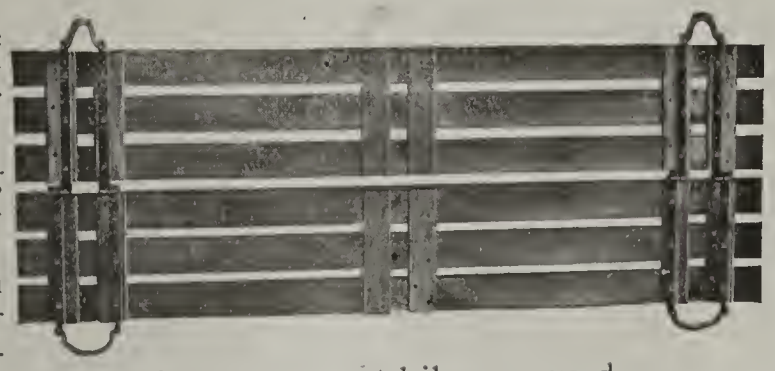
The Albert Lea (Minn.) Brick & Tile Co. have closed down their plant for the season after a very successful one. It is the intentions to make extensive improvements during the winter.

The Rome (Ga.) Brick Co. have started to rebuild their brick plant which was destroyed by fire last summer. The new plant will cost about $55,000 and will have a capacity of 100,000 brick daily. J. R. Rounsaville is secretary of the company.

The Empire Brick Co., Salt Lake City, Utah, has been incorporated with $150,000 capital stock. W. J. Burton is president; P. E. Hatch, vice-president; M. Thomas, secretary; R. P. Morris, treasurer. The company takes over the property of the Hatch Brick Co., at Bountiful.

The Johnson Non-Detachable Folding and Sliding Deck

Is adapted for any style of Dryer Car



The deck can be placed on either side or center of the car for loading or unloading without removing from the car.

The Johnson deck is a labor and material saver and is especially so when permanent kilns are used.

The Johnson deck can be made of wood, steel or galvanized iron and of malleable iron or drop forgings.

For further information address

CHARLES H. JOHNSON, 1824 Greenleaf St., Chicago, Ill.

FOR SALE

One Penfield power Repress in first-class condition, capacity 10,000 per day, used only one month, write for particulars.

American Enameled Brick & Tile Co.
1 Madison Ave., New York City.

FOR SALE

One Four Mold Simpson Dry Press
One Fernholtz Pulverizer.
One 40 h. p. Engine and Boiler. Also shafting, pulleys, etc. Have extra mold box for dry press. Will sell all or any part of this machinery.

ED SHANNON,
Shellsburg, Iowa

Second-Hand Brick Machinery For Sale

1 two-mold brick press.
1 three-mold brick press.
1 six-mold brick press.
1 42-inch clay pulverizer.
1 Freese stiff-mud auger machiue, pug mill and cutter.
1 Centennial auger machine and cutter.
1 clay mixer.
2 small engines.
Let us know your wants.

Scott Manufacturing Company,
1811 Third National Bank Bldg St. Louis, Mo.

Brick Plant for Sale or Lease

A cenveniently located brick plant on the main channel of the James River, 90 miles from Richmond. 18 miles to Newport News, and 40 miles to Norfolk, all having a good steady market for brick. Easy transportation for large boats. Want to see plant in operation. Therefore would make very easy terms.

Address MRS. AGNES L. TURNER,
Ferguson's Wharf, James River, Va.

FOR SALE

One No. 9A Brewer Tile Machine with hand Brick and Tile Cutters, Brick Dies and Tile Dies 3½ to 8 in. One 40 horse power Engine.

C. L. FINK,
Bricelyn, Minn.

WANTED

One good copy of the Clay Record, Number 10 Volume 16, to complete files for a ceramic school library. Address ROSS C. PURDY.
Ohio State University,
Columbus, Ohio

FOR SALE

Plans and Rights of Round Down-draft Continuous or Semi-Continuous Kilns. Both types possess new and improved features Address

William Radford,
Phoebus, Va.

HAMPTON'S KILNS

Burn 99 Percent Hard Brick and Tile

Old kilns easly changed.
Plans and yard rights cheap.

We Build Kilns and Guarantee Them

PITTSBURG KILN CONSTRUCTION CO.
618 14th St., N. E. Washington, D. C.

DRY PRESS FOR SALE

We have for sale one American four mold dry press, as good as new. A bargain if sold at once.

Des Moines Clay Mfg. Co.
Des Moines, Ia.

BRICK PLANT FOR SALE

Well known and good market in the city of Minneapolis. Plant is running at present. Will sell equipment and yard including horses. If deal is made quick owner can make brick this fall for spring trade. Address

Minnesota, care Clay Record,
Chicago, Ill.

POSITION WANTED

Sand-lime brick manufacturer, 15 years experience, highest references, wants position as Manager or Superintendent of a sand-lime brick plant. Capable to build a plant, to run it and to make it pay. If you cannot make money now call upon me

Address "SAND-LIME,"
Care of Clay Record, Chicago Ill.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE

Sand-Lime Brick Plant in excellent condition, making granite pressed facing brick and standard grade of sterling quality. On four railroads, close to large markets. good trade, unable to fill orders now. A snap if taken at once. Write us.

Address "506" Care of Clay Record,
Chicago, Ill.

FOR SALE

The Entire Plant of The Powhatan Clay Mfg. Co.

Operating continuosly since 1893 at Clayville, Virginia, manufacturing the universally known Powhatan Front Bricks. The entire plant empracing 800 acres of land, employees' buildings, store, good will, etc., is offered at advantageous terms. Address,

14 North 7th St., Richmond, Va.

WANTED

A practical brick and tile man to take the management of a brick and tile plant and invest some money. No tile plant within 100 miles Cannot supply the demand. Everything up-to-date in machinery, dryers, kilns, etc. Located in Michigan.

Adddress "MICHIGAN" Care of Clay Record,
Chicago, Ill.

FOR SALE CHEAP

Four Mold Ross-Keller Brick Press in good working condition. CHISHOLM, BOYD & WHITE CO.,
57th & Wallace Sts., Chicago, Ill.

FOR SALE

Two second hand American Clay Machinery Co. No. 2 Automatic Cutters.
One Western Wheel Scraper Co No. 2 Jaw Crusher.

Hydraulic Press Brick Co.,
Brazil Branch,
Brazil, Ind.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio

Address A. B. care Clay Record.
Chicago, Ill.

FOR SALE

A brick and tile plant in Green County, Iowa. Cannot supply the demand. All new machinery. Good reason for selling. Write for particulars to GREEN, Care of Clay Record
Chicago, Ill.

WANTED

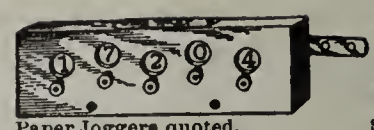
A young or middle aged man, of habits, strictly good, honest and reliable, one who is experienced in the manufacture of clay products and also able to handle correspondence pertaining thereto, and the use of machinery for the manufacture thereof, for position in sales department of reliable machinery manufacturer. In reply to this advertisement state salary that would be expected and give several references as to ability and character. .Address.

Sales Dept. Care of Clay Record,
Chicago, Ill.

LOCATION OR PLANT WANTED

I am looking for a location or preferably a plant partially or ready to run for making clay products; such as drain tile builders and pavers, in fact a good shale and fire clay proposition, preferably in Indiana or Illinois, on good road or roads Will buy a managing and sales managing interest or all if conditions are right. Address

"LOCATION" Care of Clay Record,
Chicago, Ill.



No better made, cut iron. $8 and $10, to
4 Wheel, $3.00
5 Wheel, $3.25
Guaranteed.
Sold by all dealers.

Paper Joggers quoted.
R. A. HART, 41 White St., BATTLE CREEK, MICH

GOOD OPENING FOR CAPITAL AND EXPERIENCE

For the purpose of making enlargements would like to interest capital in clay plant, have dry press and stiff mud outfits, making fire brick, face brick, hollow building tile, fire proofing and common brick. Located in the west and have a great advantage in freight rates over a good market on fire brick, fancy face brick, tile etc. Have immense deposits of high-grade fire clay, several varieties of shale and unlimited quantities of good surface clay. Would prefer to interest parties practical in clay working and will offer good inducements.

A. N. M., Care of Clay Record,
Chicago, Ill.

WANTED

To sell all or a two-thirds interest in an up-to-date Brick Plant and Coal Mines, excellent shale for street block, 12 feet of fire clay, two coal mines, both operated with compressed air machine, with more orders than can be taken care of. An excellent proposition and a money maker, good reason for selling, Manager wants to go South. If interested write to, "BERT" Care of Clay Record
Chicago, Ill.

DRYER CARS

We have on hand a lot of secoud hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, Ohio

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick.
Address,

FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE

One Form Mold Berg Dry Press. good as new. Made about 200,000 brick. Guarenteed in good working order. Address

BUCKEYE FIRE BRICK & CLAY CO.,
Scioto Furnace, Ohio

FOR SALE

Brick Yard within easy hauling distance of Chicago. 13 acres, well equipped plant. Would lease or make good proposition to man to make investment and run the plant. Address

FRANCIS LASLOW,
79 Walnut St., Oshkosh, Wis.

FOR SALE

New Sand Lime Brick Hardening Cylinder, 6 feet diameter by 68 feet long. One removable head. Immediate shipment.

FRANKLIN BOILER WORKS CO.,
Troy, N. Y

PLANT FOR SALE

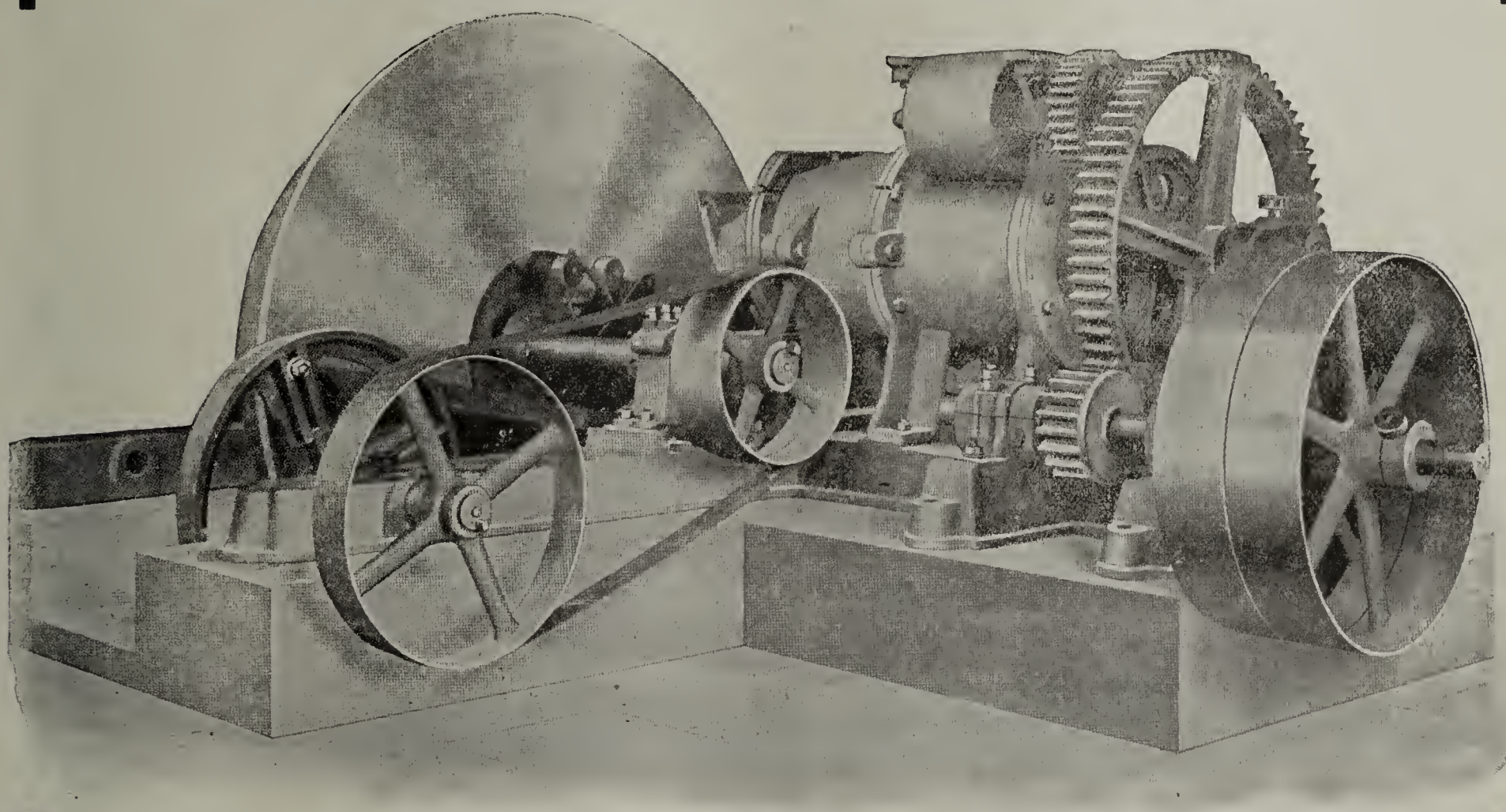
Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capacity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7.00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles. Cheap fuel and labor; can operate with steam dryer year around. Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments

W. L. JONES,
Lock Box 5, Williamsburg, Va.

75 Cents vs. 15 Cents

The cost of cleansing clay by the filtering process is 75 cents or more, per ton. The Diesener Clay Cleanser takes all the dirt, that cannot pass through the 1-16 in. slot, out of the clay for less than 15 cents per ton, and does the work better than the filtering process, because it does not remove the valuable kaolin sands and other important ingredients that should be left in the clay.

THE DIESENER CLAY CLEANSER



Eliminates Limestone—or Pyrites Troubles

This machine takes out the objectionable matter without necessitating the process of crushing

The Diesener Clay Cleanser works upon plastic surface clay AS IT COMES FROM THE BANK, after this clay has been well tempered and pugged in a suitable pug mill. The process of cleaning is as follows:

An auger machine (as shown in the above halftone) pushes forth a solid bar of well-pugged and watered clay in stiff mud condition. This bar slides down an inclined plane and is pushed against a rotary disc. The material of this disc is a special iron alloy, discovered after many costly experiments.

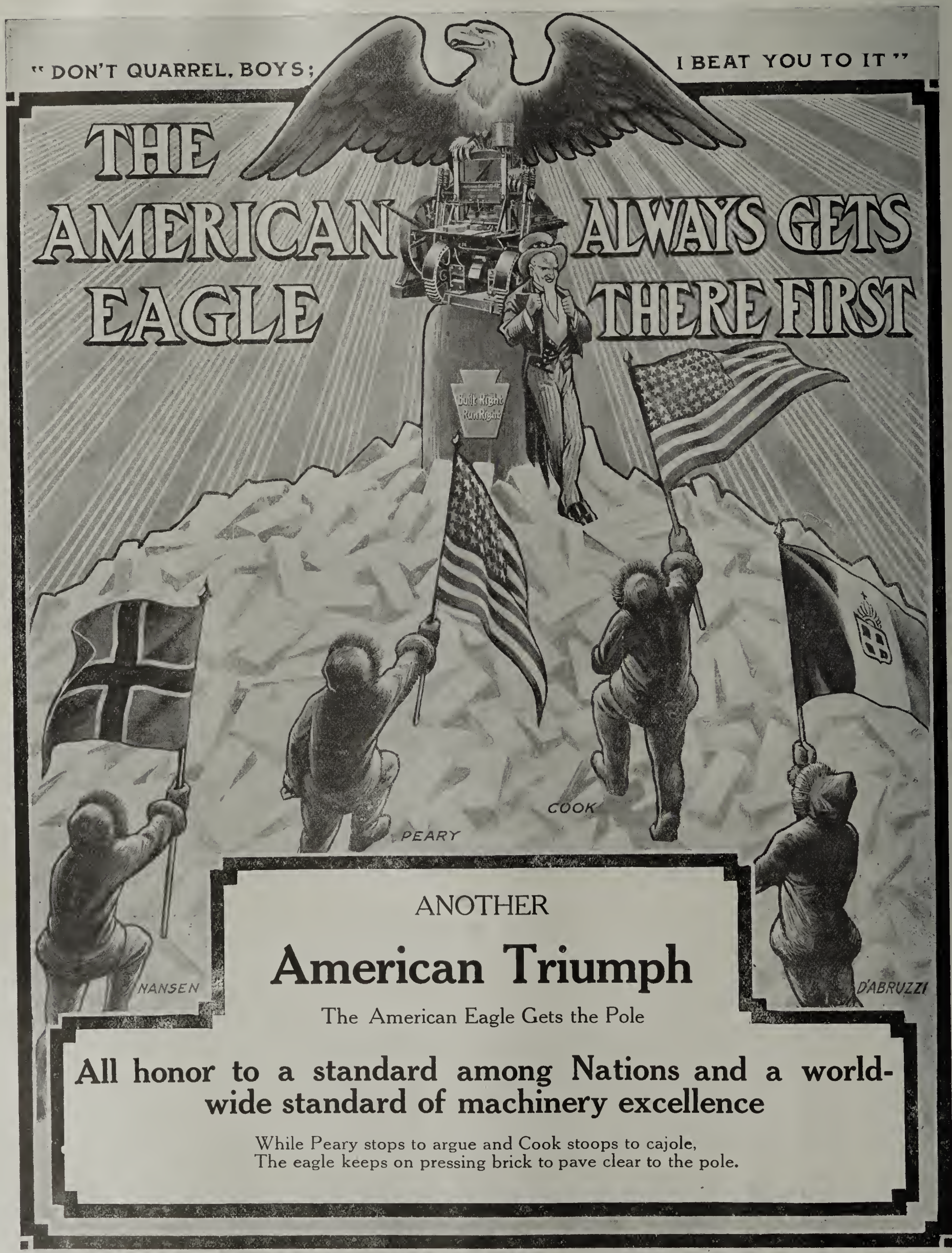
The disc by friction "sucks" the clay into and through a slot, and the foreign matter like PYRITES, LIMESTONE, PEBBLES, SCREW-NUTS, WEED-ROOTS, and so on, if they are too big to pass through the slot, are caught in it and and REMOVED from it CONTINUOUSLY and AUTOMATICALLY.

We wish to emphasize this particular feature of the Diesener Clay Cleanser—that it does not crush or pulverize the pyrites or limestones and then mix the same into the clay. It takes them out without crushing or even without breaking.

Richard G. Hoffman

Sole Representative in the U. S. for Mr. H. Diesener, Charlottenburg, Germany

La Grange, Ill.



ANOTHER

American Triumph

The American Eagle Gets the Pole

All honor to a standard among Nations and a world-wide standard of machinery excellence

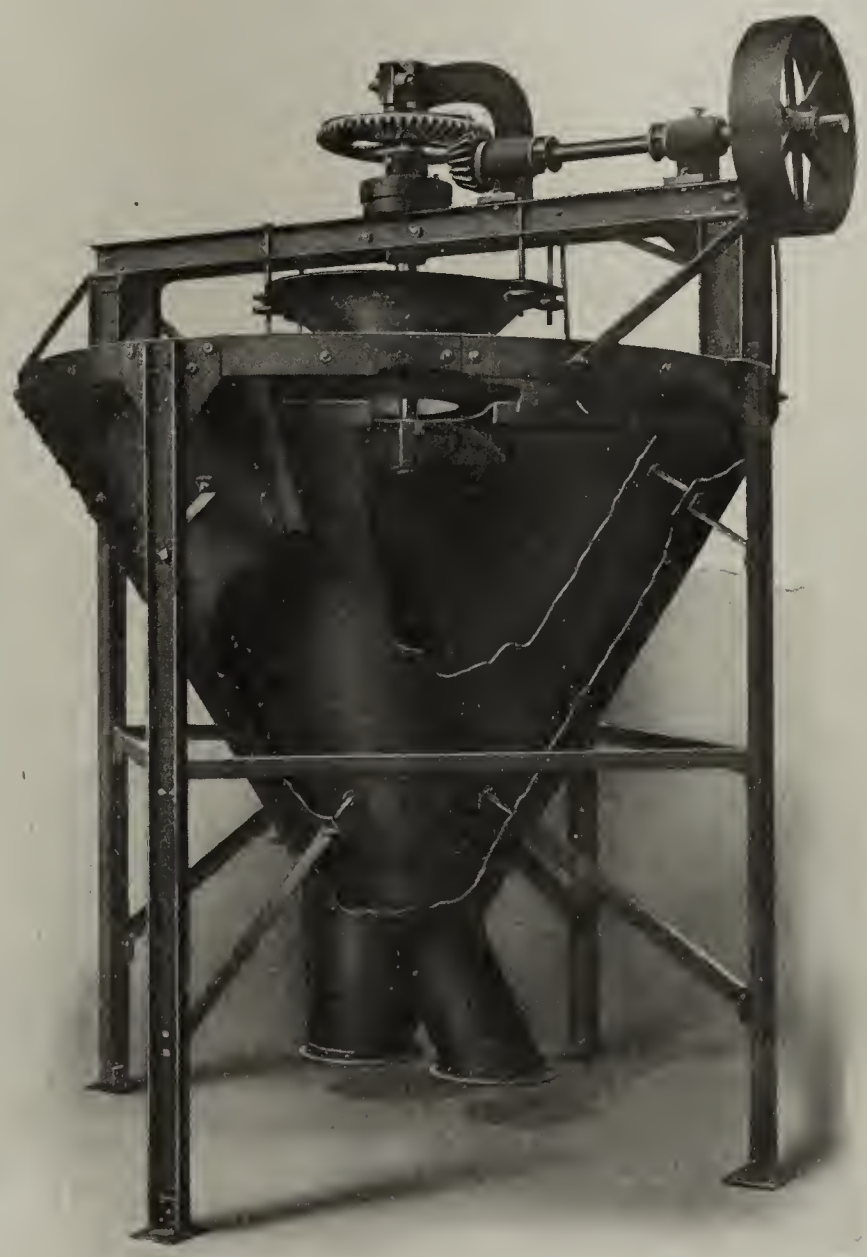
While Peary stops to argue and Cook stoops to cajole,
The eagle keeps on pressing brick to pave clear to the pole.

Centrifugal Clay Screen

IN OUR NEW CENTRIFUGAL CLAY SCREEN WE HAVE A RADICAL DEPARTure in Clay Screens. The motion is centrifugal instead of vibratory. The life of the machine is thus lengthened and the capacity increased. As the cut shows the screen is made up of two hoppers substantially mounted on a steel frame. The screen plate is circular with large screening surface. It is supported by spiders in a horizontal position. The spiders are keyed to the vertical shaft which is connected to the driving shaft by a pair of bevel gears.

Just beneath the screen plate is a steam coil heater arranged to heat the screen plate to prevent damp clay from clogging perforations in the plate.

Surrounding the vertical shaft is a cast iron hopper or spout through which the clay is fed on the screen plate. This hopper can be raised or lowered to regulate the flow of clay on the screen. The hopper being always full of clay keeps an even flow to the screen. The screen as it revoles throws the clay from the center to the outside of the screen plate, the flow being even and regular. The larger particles of clay, too large to pass through the perforations, pass over the screen plate to the outside and fall through the outer housing to a spout conveying them to the grinding pan for regrinding. The fine particles of clay sift through the screen plate into the inner housings or hopper and pass to a conveyor and into a clay bin.



The whole operation is rapid and thorough and the principle insures great capacity and freedom from troubles. Many of these screens have been installed and are giving universal satisfaction

In actual operation the No. 147 Screen, which has a screen plate six feet in diameter, is screening equal to the capacity of two nine-foot dry pans. We also build this screen with a four foot screen which will handle clay to the capacity of one pan. Full particulars as to construction and operation of this screen will be sent upon request

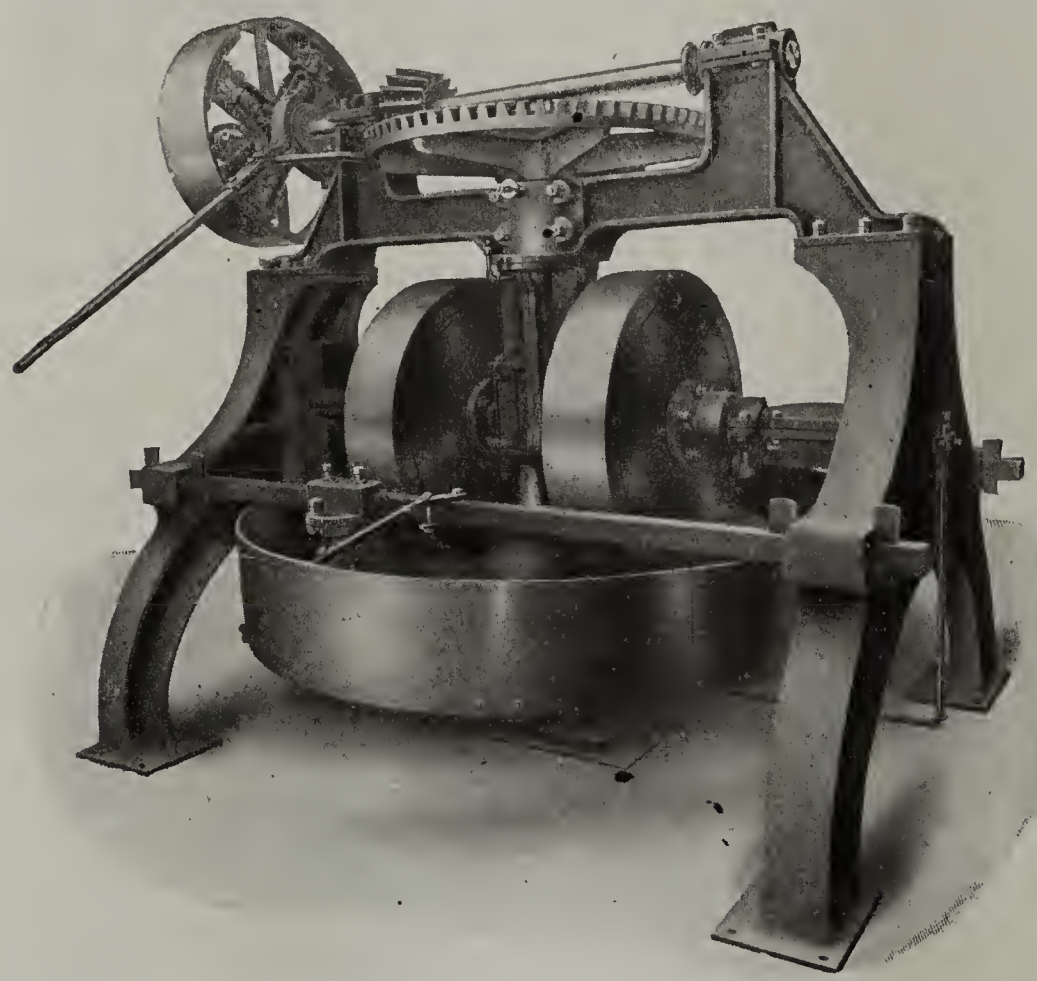
We build every machine and appliance required for the manufacture of every class of clay products by all processes. We are much the largest manufacturers of Clay Working Machinery in the world. Manufacturing as we do every machine and appliance right in our own factories we are better prepared to serve you at a saving in time and money than are others.

The American Clay Machinery Company

Bucyrus, Ohio, U. S. A.

Wet and Dry Pans

TO THE EXACTING BUYER OF DRY AND WET PANS OUR LINE APPEALS strongly because of the superiority of design and excellence of material and workmanship all of which are features which are of the greatest importance in the permanent satisfactory operation of pans. The capacity of a pan depends largely upon its design and construction, and the distinctive features embodied in our line of pans have given them a greater capacity than others and have insured more working hours per pan with fewer delays and repairs than can be had from other styles of pans. We have been generous in the design of each pan our lines being the heaviest on the market. This feature should be given special consideration as a lighter weight pan is necessarily much cheaper and should not be compared with our heavy, durable and efficient machines.



The heavy side frames are substantially tied together at the top by the cross beam, in the center by tie bars and also on the floor line. The shafting is large and of steel. The gears are of special design and excellent quality. The bearings are long and well babitted. The mullers are heavy, adjustable and removable. The screen plates are made of special iron. The step is of our approved type and the complete pan is one that can be depended upon under more than ordinary circumstances. All joints are carefully machined and fitted and bolts are made secure by lock-nuts. The vertical shaft and muller shafts are secured by large removable bearings, which make it possible to remove any of these shaftsor the mullers without disturbing the balance of the pan. The gearing is kept to its full efficiency by our device for taking up any possible wear, which insures a perfect mesh of teeth at all times.

For preparing successfully many kinds of fire clay, shale and slate used for paving brick, and for grinding burnt brick or pipe for grout, etc., dry or wet pans are a necessity. The wet pans are particularly adapted for handling material in moist condition, while for use in dry pans it should be practically dry, so that when ground, it will readily pass through the screen plate without clogging.

Write for particulars on our "Divided Screen Plate" which will make a big saving of screen plates. There in no machine required for the manufacture of any clay product which we do not build. Each machine is superior in it's class and of our standard quality.

Built Right Run Right

The American Clay Machinery Company

Bucyrus, Ohio, U. S. A.

Built Right Run Right

THE BOSS SYSTEM OF BURNING BRICK

Involves the ORIGINAL PRINCIPLE of applying AIR UNDER PRESSURE.

Applies to Any Style of Kiln.

Absolute Control of Heat in Kiln.

WRITE FOR CATALOG

40% Reduction in Fuel Cost.

Burns All First-Class Hard Brick

JOHN C. BOSS OFFICE: MONGER BLDG. **Elkhart, Indiana**

Do Your Brick Turn White?

HERE IS THE REMEDY.

PRECIPITATED

Carbonate K.B. C.F.H. **of Barytes**

The only preventative for scum and discoloration on facing Brick and Terra Cotta; neutralizing the Sulphate of Lime in the Clay and Water.

Circulars and Particulars on Application.

GABRIEL & SCHALL

205 Pearl Street NEW YORK P. O. Box 1712

RICKETSON'S MORTAR COLORS — They Never Fade

Twenty long years of time and weather have tried out Ricketson's Famous Red Brick" Brand

..COLOR..

for Mortar, Brick, Cement, Stone, etc., Proves it Absolutely Permanent. Red, Brown, Buff, Purple, Black.

RICKETSON MINERAL PAINT WORKS
MILWAUKEE, WISCONSIN.

C. K. WILLIAMS & CO.

EASTON, PA.

BRICK AND MORTAR

COLORING

Send for full descriptive Circulars

New CLAY FEEDERS and MIXERS for Brick, Tile and all Clay Working Plants

Saves the labor of from 1 to 2 men in every factory, besides mixing and feeding the clay evenly to the disintegrator

One of the many testimonials we have received from users of these Feeders

SUMMITVILLE DRAIN TILE COMPANY
Manufacturers of **Porous Drain Tile**

Harry L. Erlewine, Secy. and Treas.,
Marion Machine, Foundry and Supply Co., Marion, Indiana

Dear Sir:

Acknowledging your favor of the 21st inst., will state that the type "C" Feeder which we have installed in our plant here is "making good" in every way and is all you claim for it.

Since installing the Feeder we have been able to get along with two men less, thereby reducing our weekly pay-roll $20.00 and at the same time have increased our output 10%, decreased our power 10%, and as our capacity is 1200 cars per year, you can easily see the great advantage we have since installing the Feeder and Mixer.

All this saving is effected because of the even, steady feeding of the clay to our disintegrator. We have our tracks elevated about 9 feet above your Feeder and Mixer, and we are enabled to dump about 25 car loads of clay in our storage bin over the Feeder, and the Feeder takes care of all this clay without any further attention on our part.

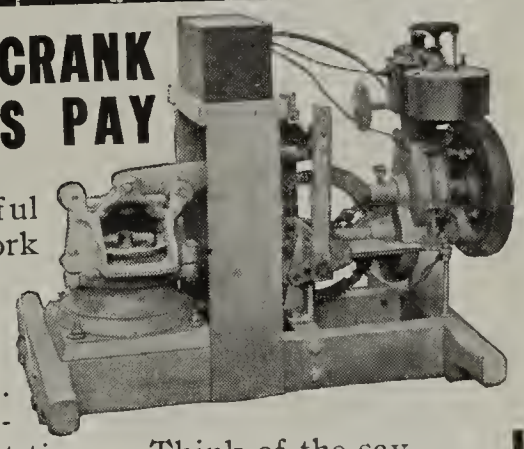
We feel that this is one of the most valuable machines we have in our plant and no one who has ever tried one of your Clay Feeders would go back to the old way. Thanking you for the courtesies shown, we remain

Very truly yours,

SUMMITVILLE DRAIN TILE CO., Per JAMES F. MORRIS, Vice-Pres.

MARION MACHINE, FOUNDRY and SUPPLY CO., Marion, Ind.

A TURN OF THE CRANK SAVES 2 MEN'S PAY



THIS wonderful pump does the work of two men, at a small fraction of their wages, and without argument.

It will pay for itself in a very short time. Think of the saving in dollars and cents, the saving in time, the gain in efficiency.

No contractor or engineer who has any quantity of water to contend with can efford to be wiihout the marvelous

Fuller & Johnson

Bilge Pump Engine

It doesn't need to be urged to do its best — it can't do anything else.

It is built with the same care and attention to details, the same thoroughness and honesty, as all Fuller & Johnson Engines.

It's always ready, day or night at a touch.

Each day you're without it you're throwing good money away.

Send for our Bulletin and see for yourself. (21)

Fuller & Johnson Mfg. Co.

Established 1840

458 2nd Street, - Madison, Wis.

Fire Brick——Fire Clay

AND FIRE CLAY PRODUCTS

Manufactured out of highest grade Missouri semi-flint fire clay.
A large stock of Number One brick and shapes always on hand.
Let us quote you prices and we will save you money.
Samples sent upon request. Address

Mexico Brick & Fire Clay Co.

MEXICO, MISSOURI

Something New In Brick Kilns and Dryers

The Dennis Double Chamber Up and Down Draft Brick Kilns and Direct Heat and Hot Air Brick Dryers show many new features that make them superior to all others. Economical, durable and strong in construction and operation, having many points of dvantage that appeal to practical brickmakers. Patented April 14, 1903 and September 8, 1903 Brick plants installed and put in operation. Write for booklet. Correspondence solicited.

F. W. DENNIS,
145 Water St., Norfolk, Va.

Approved and Labeled

Fire! Fire!! Fire!!!
Extinguishers

Protect your Home, Business, Factory

Insurance Reduced. Child can Operate.
Made of Copper. Will Last a Lifetime.

Chemical charges can be procured at any drug store

Write today; don't wait; delays are dangerous.

O. J. Childs Company

Sole Manufacturers — Utica, N. Y.

AMERICAN RING-HAMMER PULVERIZER

Two Models, one for Clay, Shale, one for Rock

Will pulverize from 4 mesh to 200 mesh, 1 to 50 tons per hour, according to size of machine, fineness required, kind and condition of material.

30% to 60% less 3peed, and 25% to 50% less power, due to the RING and its utilization of CENTRIFUGAL FORCE

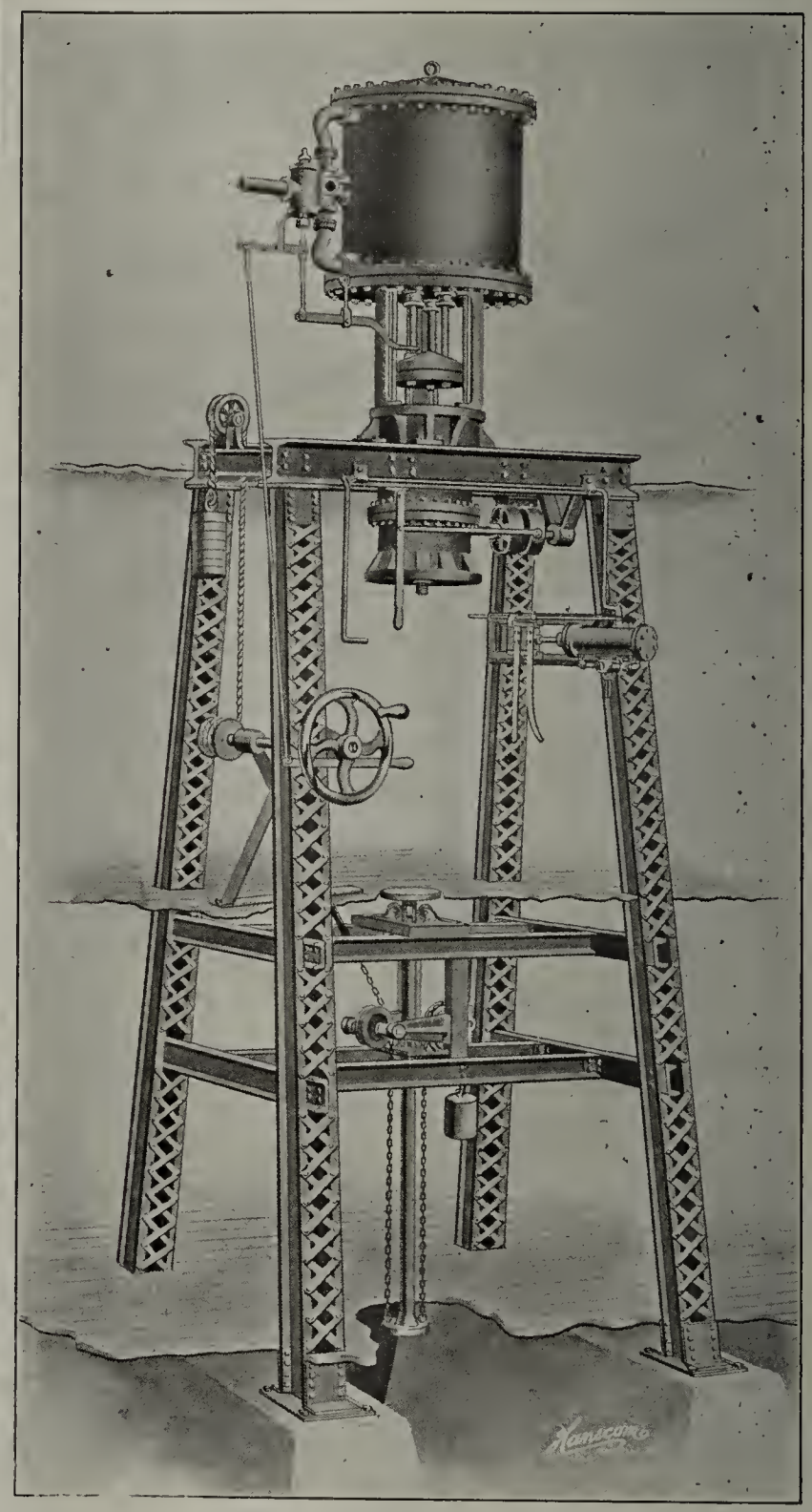
We make six sizes and every machine guaranteed to do the work which it is contracted to do when sold.

Revolving Screens Air Separators
[Ask for Circulars and Information]

AMERICAN PULVERIZER CO.

Suite 410 Jaccard Bldg., ST. LOUIS, MO.

DISTRICT SALES OFFICES:
F. C. Willis, 36 LaSalle St., Chicago, Ill.
I. R. Coles & Co., 39 Cortland St., New York City.
Lindrooth, Shubart & Co., Boston Bldg., Denver, Colo.



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SEWER-PIPE MACHINERY

COMPLETE EQUIPMENT

THE TURNER, VAUGHN & TAYLOR COMPANY

CUYAHOGA FALLS, O.

REBUILT ENGINES AND BOILERS

The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

ENGINES—Automatic—16x32 Buckeye, 15x14 Erie, 14¼x16 Buckeye, 14½x14 Ball & Wood, 13½x15 Taylor, 13x16 Erie, 12x14 Green, 12x12 N. Y. Safety, 10x10 Fisher, 9½x12 Leffel, 8x10 Allfree, etc.

ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

BOILERS—Stationary—72x18 High Pressure, 72x18 Standard, 72x16, 66x16, 60x20, 60x16, 54x16, 54x14, 54x12, 48x16, 48x14, 44x14, 40x12, 40x9, 36x16, 36x10, etc.

BOILERS—Fire Box—80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 h. p., etc.

BOILERS—Vertical—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 3 h. p., etc.

HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

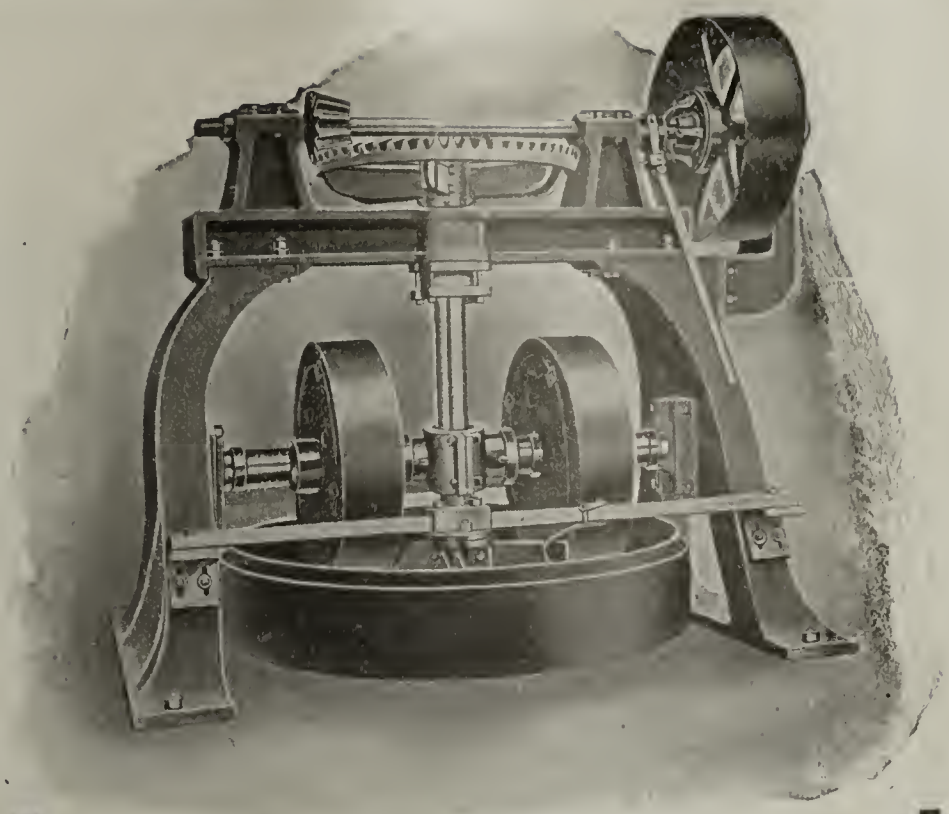
Saw Mills, Lath Mills, Edgers, Cut-Off Saws, Tanks, etc. Write for list.

Also full assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

The Randle Machinery Co.

1732 Powers Street **Cincinnati, Ohio**



PHILLIPS & McLAREN CO. PITTSBURG, PA.

BUILDERS OF

Pittsburgh Standard Dry and Wet, Revolving and Stationary Grinding Pans for Brick, Cement, Sand, Terra Cotta and all kinds of Refractory Materials.

ROCK AND ORE CRUSHERS

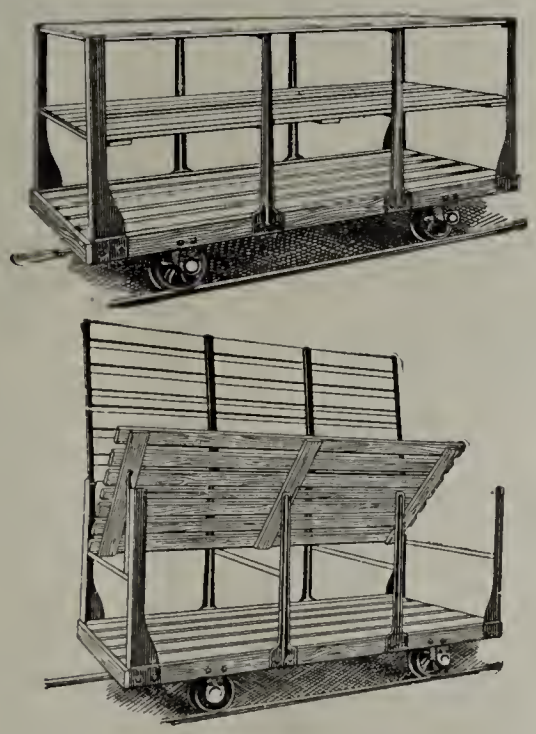
When writing for prices state kind of material and capacity required.

Eastern Offices

Stephen Girard Building, Philadelphia, Pa.

The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices



Vulcan Iron Works MASON CITY, IOWA

"A CHANGE IN FLUES MAKES THE DIFFERENCE IN DRYERS"

POTOMAC BRICK COMPANY

1413-G Street, N. W.

ELLIOTT S. MORSE, Gen. Mgr

Washington, D. C., March 19, 1909.

THE KING ENGINEERING CO.,
Richmond Va

Gentlemen:—Our No. 1 10-tunnel Sharer Radiated heat dryer before it was remodeled by you gave us an average of 55 cars per day of dry brick.

You completed the reconstruction of this dryer the latter part of January last. This day we have examined our records and find that our daily average now is 80 cars dry brick.

Yours very truly,

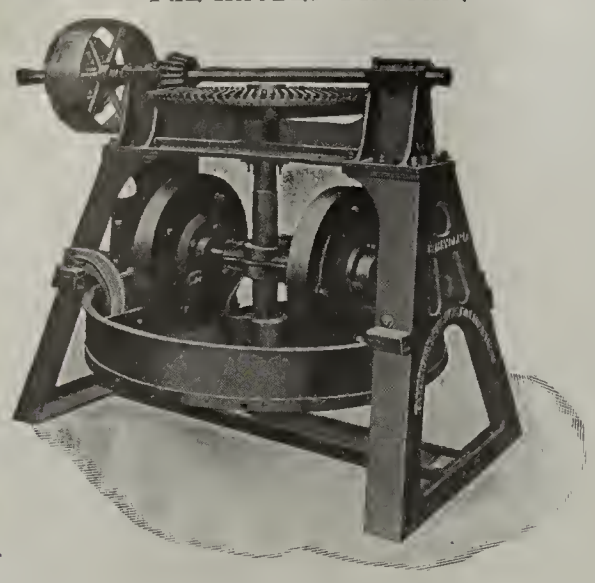
(Copy) ELLIOTT S. MORSE.

That which we have done for the above Company we can do for You. We can remodel any Radiated heat dryer and increase its capacity from 15 to 30 per cent.

THE KING ENGINEERING COMPANY

RICHMOND, VA.

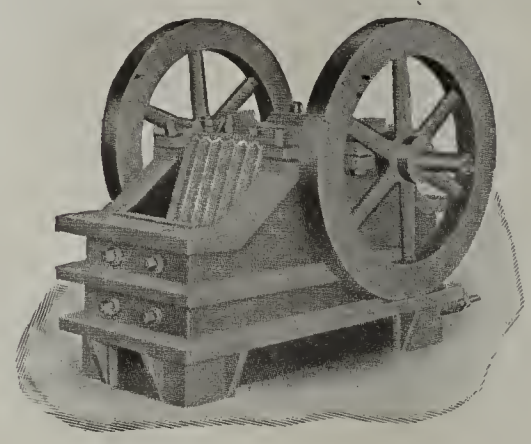
THE HAYDEN DRY PAN.



Masssive and well proportioned.
Best material.
Time tried and reliable.
Large capacity.
Acurate mechanism.
Independent or yoked mullers.

Send for specifications and prices before buying.

THE HAYDEN CLAY CRUSHER



This Crusher is specially designed and adapted for use as an auxiliary to the dry pan.
Capacity 10 to 30 tons per hour.
Simply constructed and the strongest machine of the kind on the market.

Send for circular and prices.

THE HAYDEN BRICK TESTING RATTLER

For testing paving brick.
Built to the standard specifications of the N. B. M. A.
Best material and workmanship.

Send for descriptive matter.

The P. HAYDEN S. H. CO., Foundry and Machine Dept.

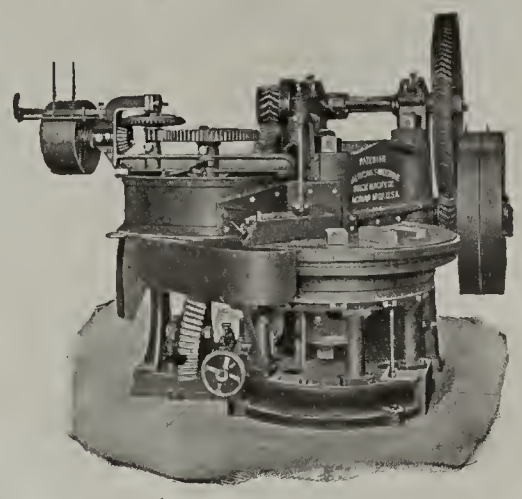
Manufacturers of

WET AND DRY PANS, CLAY CRUSHERS, STEAM CLAY PRESSES, RATTLERS, BRICK CARS, CARWHEELS, AXLES, KILN BANDS, etc.

112 West Broad Street **COLUMBUS, OHIO**

The American Sandstone Brick Machinery Co.

INCORPORATED APRIL, 1902
SAGINAW W. S., MICH.



Improved Saginaw Rotary Presses

Are now being built with extra table for making fancy brick, on which double pressure is exerted.

Don't confuse our Practical System with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant, starting and operating at our expense until at least 100,000 brick are made before asking for a settlement.

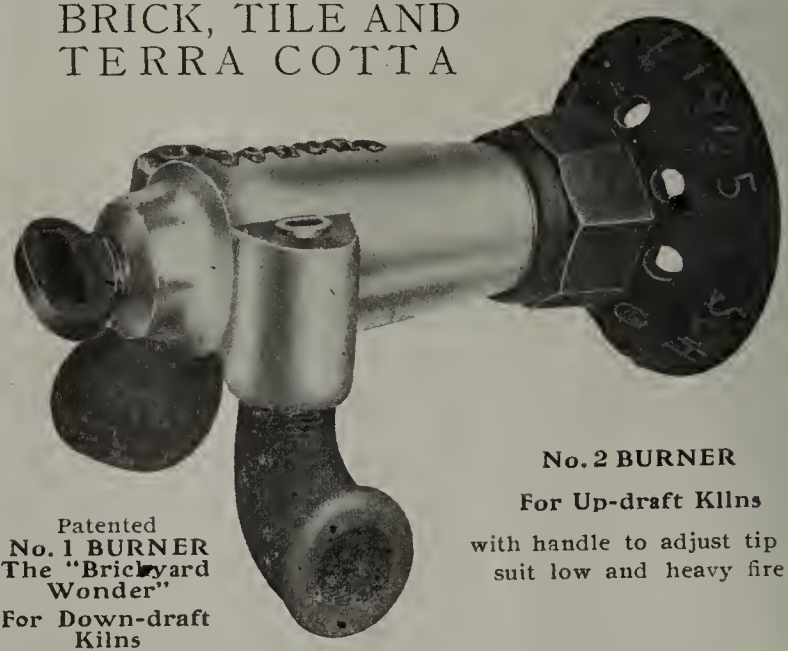
Our plants are **installed under the supervision of Practical Engineers who know how Sand-Lime Brick should be and can be made.** We have **Practical Plants Running Successfully** to show to prospective investors.

WE ARE NOT SCIENTISTS

We **Produce Results,** because we are the **Oldest Practical Sand-Lime Engineering Company Doing Business in the United States,** and **we defy contradiction.**

SCHURS Perfected Oil Burners

MOST ECONOMICAL BURNERS ON THE MARKET. DESIGNED ESPECIALLY FOR BURNING BRICK, TILE AND TERRA COTTA



ADJUSTABLE TIP

Patented
No. 1 BURNER
The "Brickyard Wonder"
For Down-draft Kilns

No. 2 BURNER
For Up-draft Kilns
with handle to adjust tip to suit low and heavy fire

Not an experiment, but a severely tested, well proved burner whose superiority to all others has been amply demonstrated.

Write for Booklet containing full information.

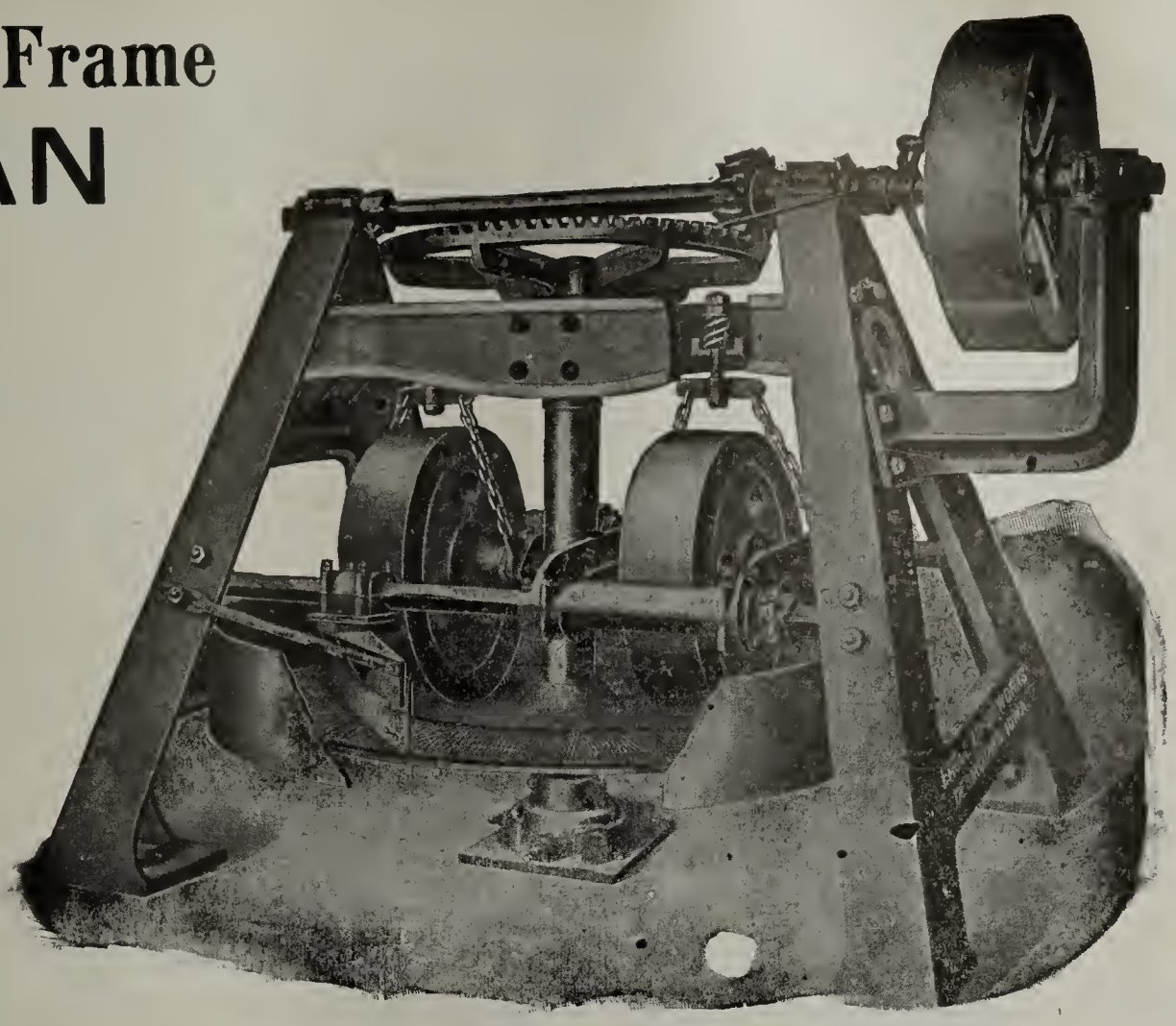
JOHN SCHURS, Patentee and Manufacturer
1007 NORTH MAIN STREET **LOS ANGELES, CAL.**

Nine Foot Iron Frame
DRY PAN

With Independent
and Suspended

MULLERS

A well-tried and
proven Success.



EAGLE IRON WORKS, BUILDERS, DES MOINES, IOWA

Steel Brick Pallets

Built Right,

Price Right,

Write Us

ALL STYLES

STYLE No. 4.

The only Steel Bench Pallet that can be stacked without slipping. They Interlock. Light, Strong, Rigid. (Patented.)

MADE EXCLUSIVELY BY

THE OHIO GALVANIZING & MANUFACTURING CO.

NILES, OHIO

PAUL FUCHS

Manager of the Excelsior Granite Brick Co. -:- Specialist for the Sand-Lime Brick Industry

Inventor of a New Process for Making "GRANITE BRICK"

My system enables the manufacturer to turn out a sand-lime brick of a compression strength of 9,000 pounds per square inch from proper raw materials. Send in a one-pound fair average sample of your sand and a one-pound sample of your lime for examination.

Porcelain Enamel for Clay Brick

Forward, express charges prepaid, ten brick for testing purposes.

Special Enamel for Sand-Lime Brick

Send in as many brick as colors wanted and specify colors desired.

1747 CARMEN AVE. Chicago, U.S.A.

HANDLE YOUR CLAY WITH ONE MAN AND

The Thew Steam Shovels

Made in Four Sizes. Mounted on Car Wheels or Traction Wheels.

Type No. 0 Shovel—Ohio Brick Co., Toledo, O.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adjusted to cut to any desired level.

: : Only One Operator Required.
Wire Cables used Instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickyards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

Write us for Catalogues and Information.

THE THEW AUTOMATIC SHOVEL CO.

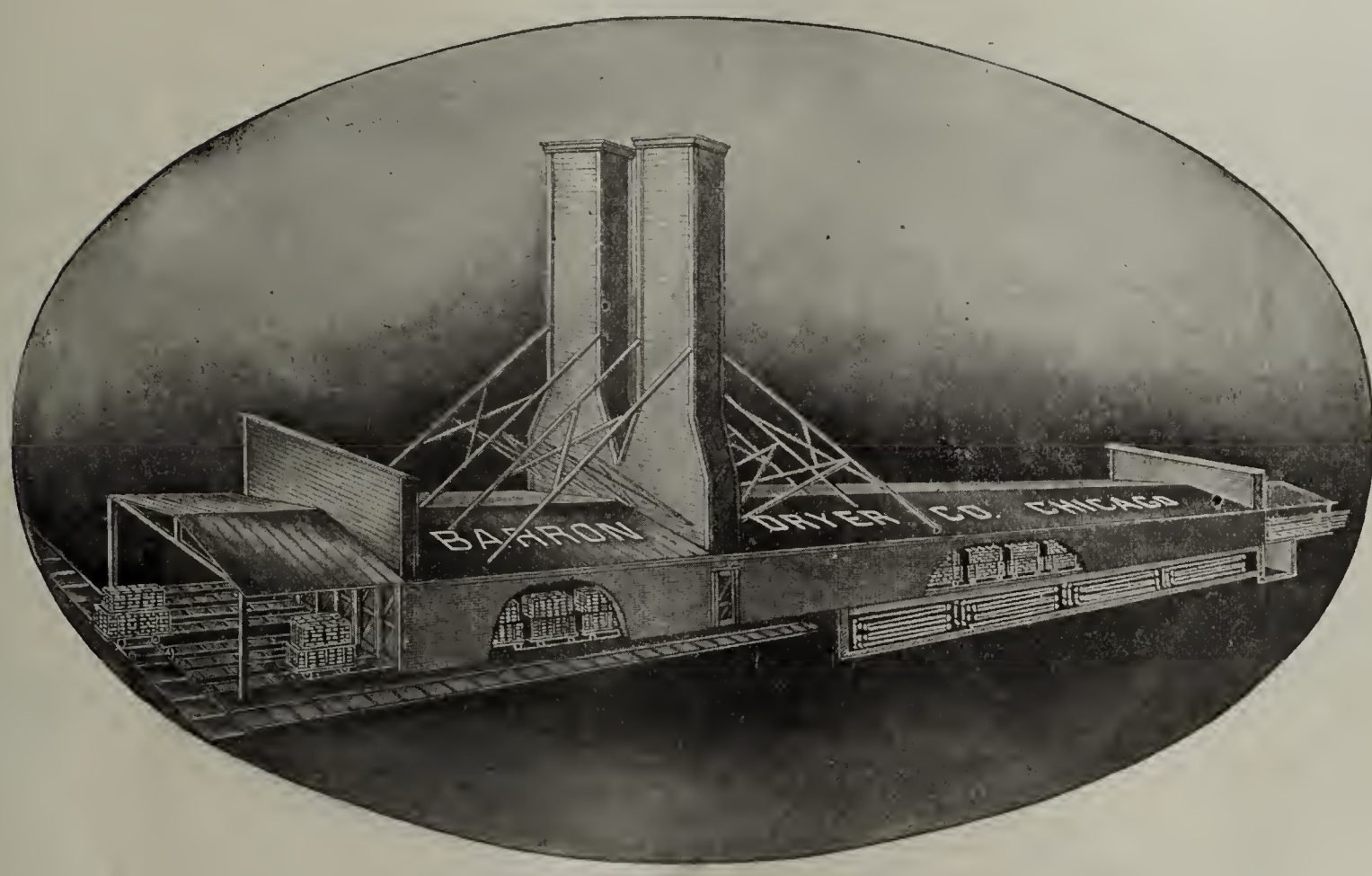
LORAIN, OHIO

BARRON DRYER COMPANY

Established 1879

MANUFACTURERS, PATENTEES and BUILDERS of the

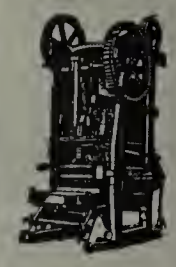
CHICAGO IRON CLAD DRYERS
BARRON'S TENDER CLAY DRYERS



CARS, WHEELS, AXLES, DECKS, TURNTABLES
CASTINGS, FORGINGS, PIPE, VALVES, FITTINGS
RAILS, SPLICES, SPIKE, STRUCTURAL MATERIAL

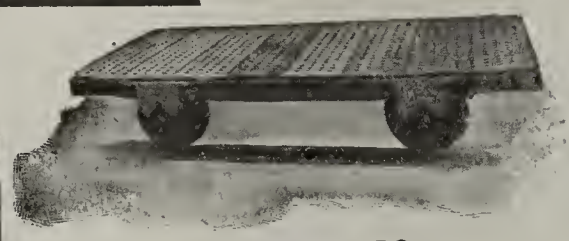
OFFICE AND SHOPS 1335 SLOAN STREET ON C. & N. W. RY. CHICAGO

THE "MARTIN" CLAY-WORKING MACHINERY



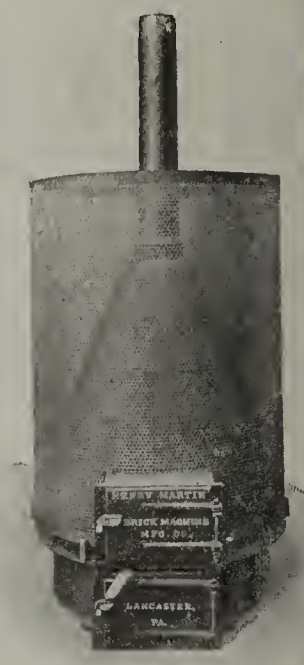
IS KNOWN THE WORLD OVER FOR

ITS SIMPLICITY DURABILITY AND COMPLETE SATISFACTION THROUGHOUT



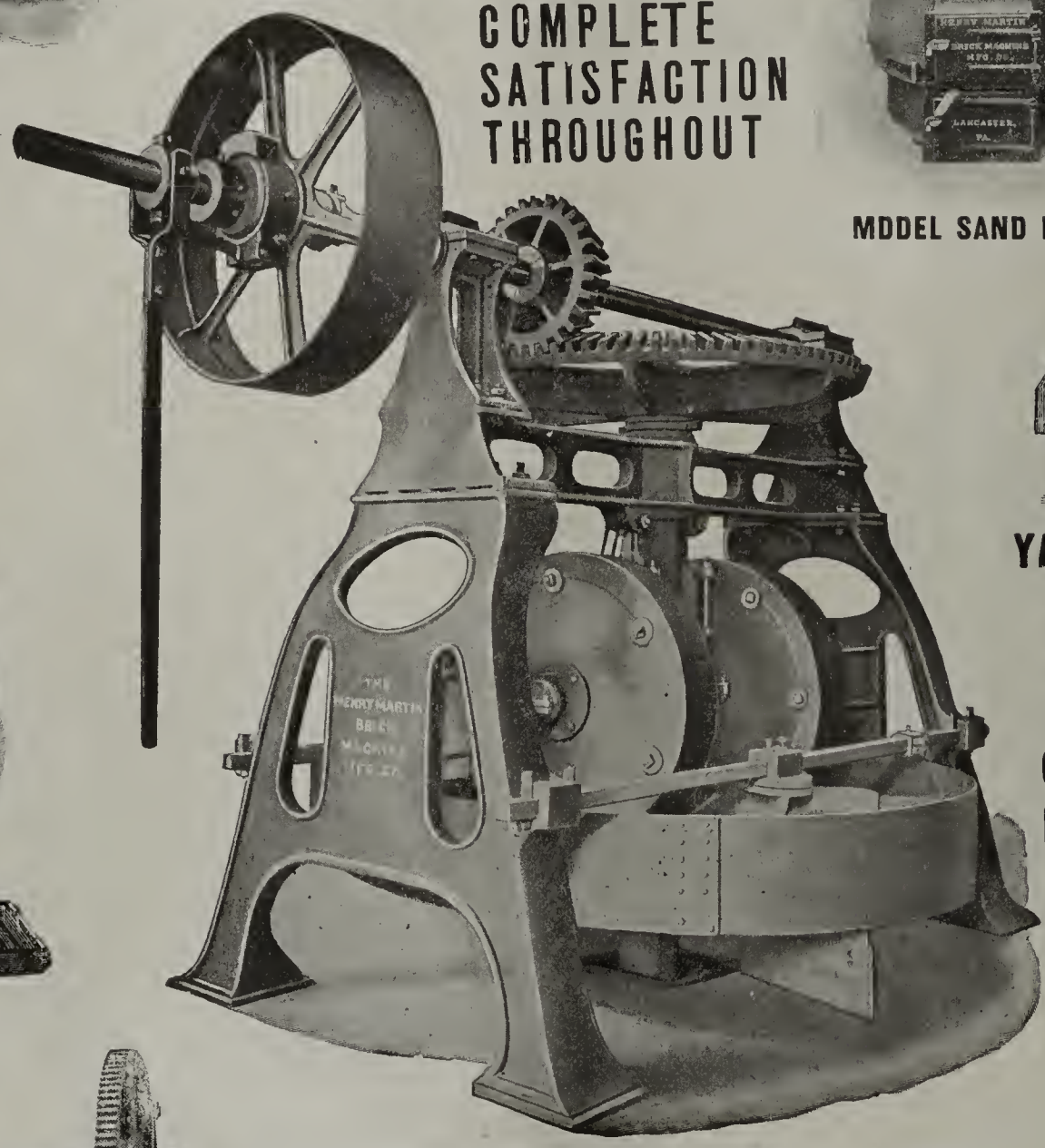
DRYER CARS

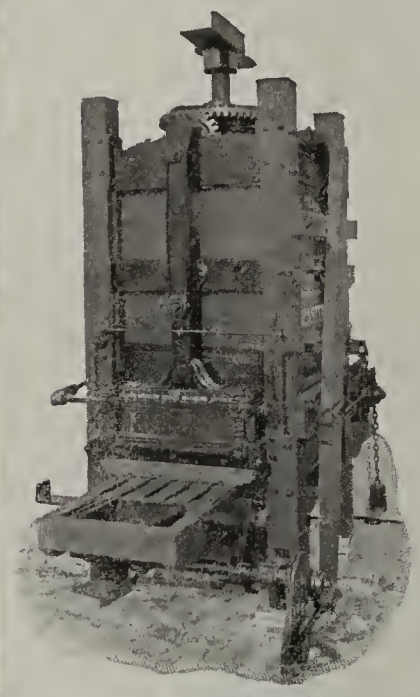
TRUCKS



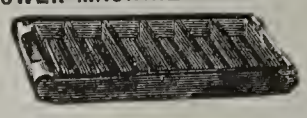
MODEL SAND DRYER

WE GUARANTEE OUR MACHINERY

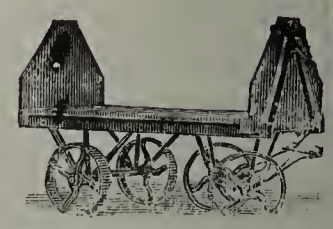




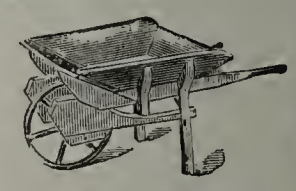
HORSE POWER MACHINE



BRICK MOULDS THAT ARE BUILT FOR HARD USAGE IS THE "MARTIN." TRY A SET



YARD SUPPLIES



OF ALL KINDS BUILT RIGHT

TRUCKS

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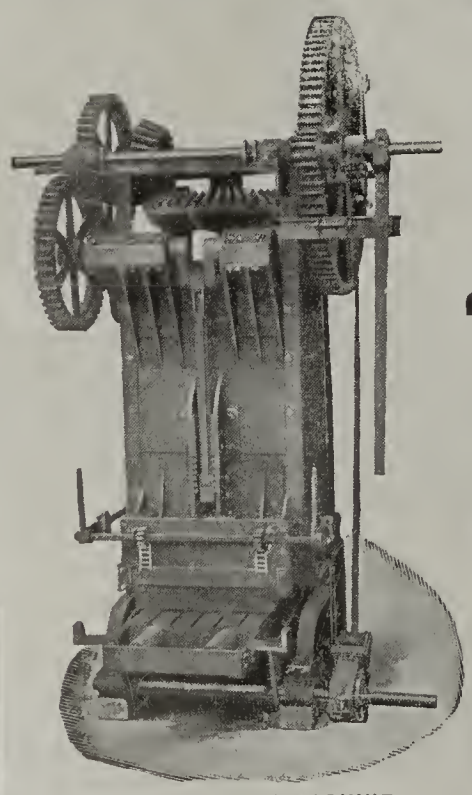

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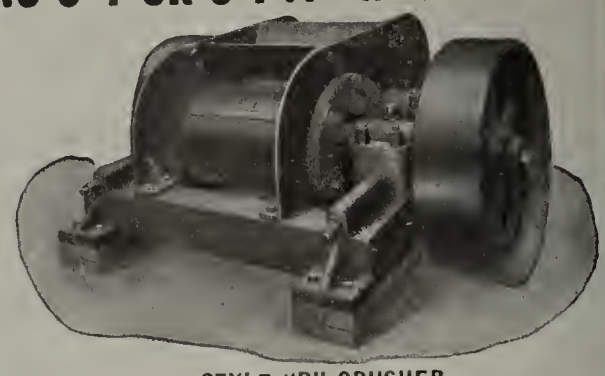

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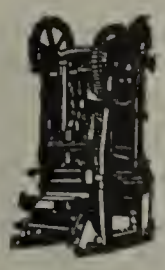

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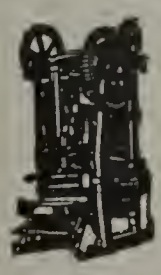

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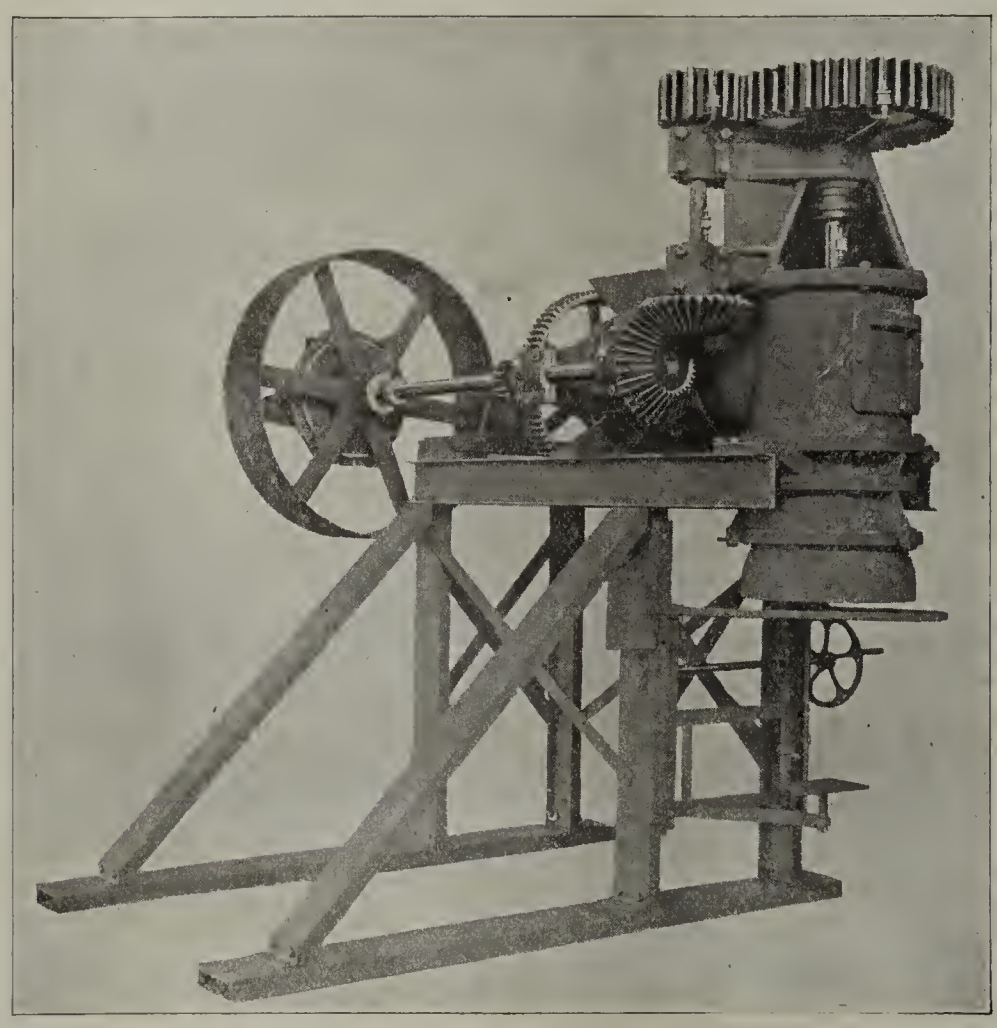

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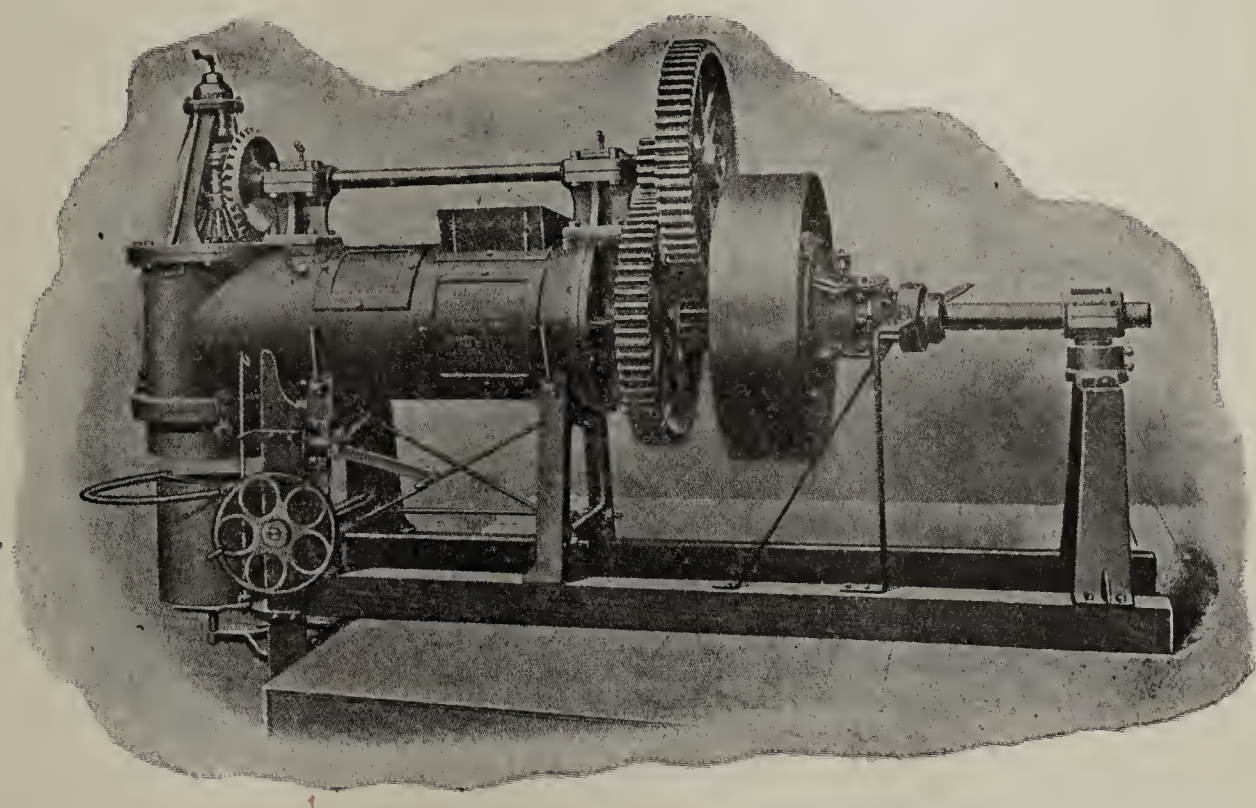

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VOL. 35 NO. 11

CLAY RECORD

A JOURNAL DEVOTED TO THE DISSEMINATION OF ALL MATTERS PERTAINING TO THE CLAY INDUSTRY

December 15, 1909

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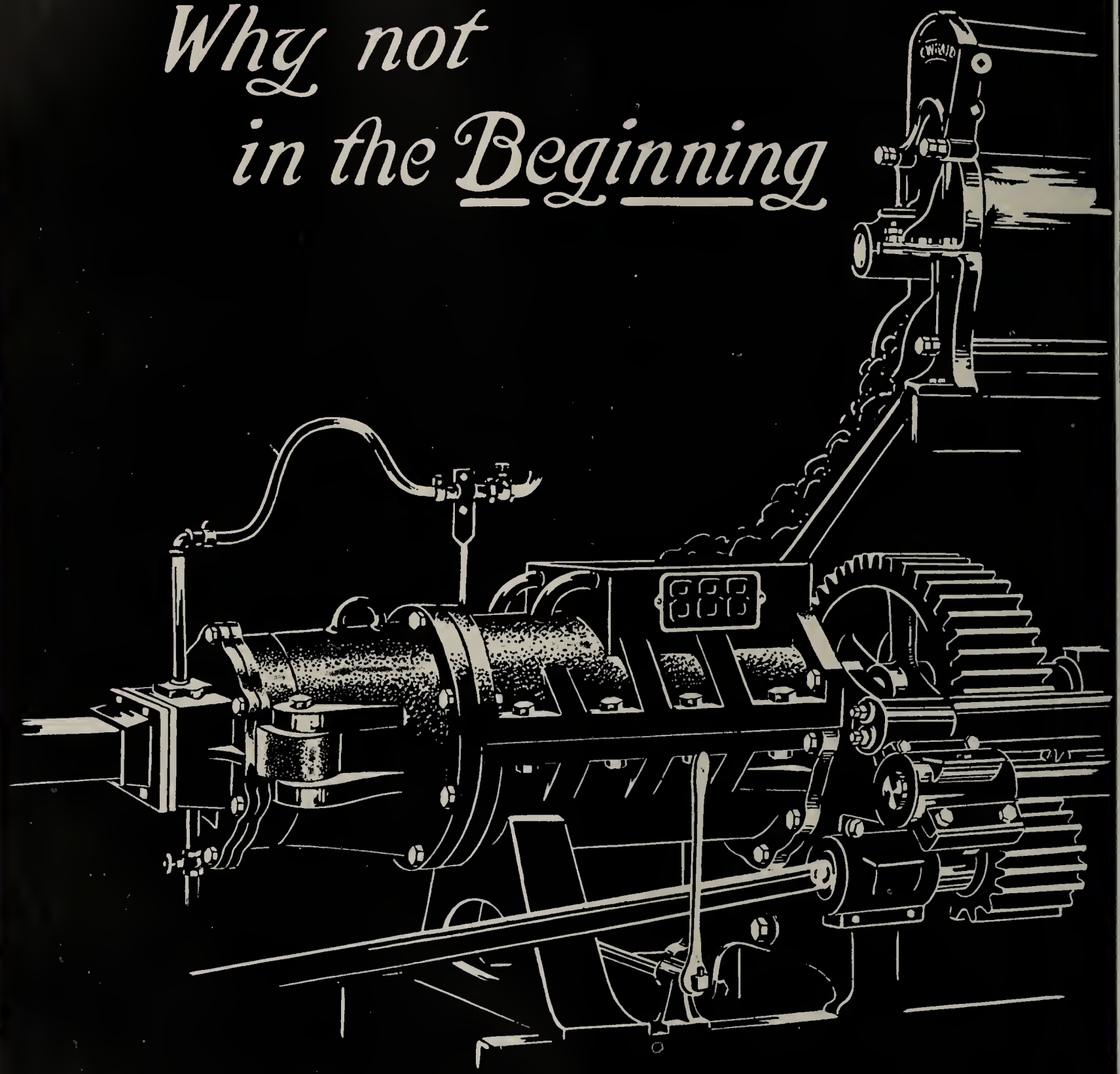
Why not

in the Beginning



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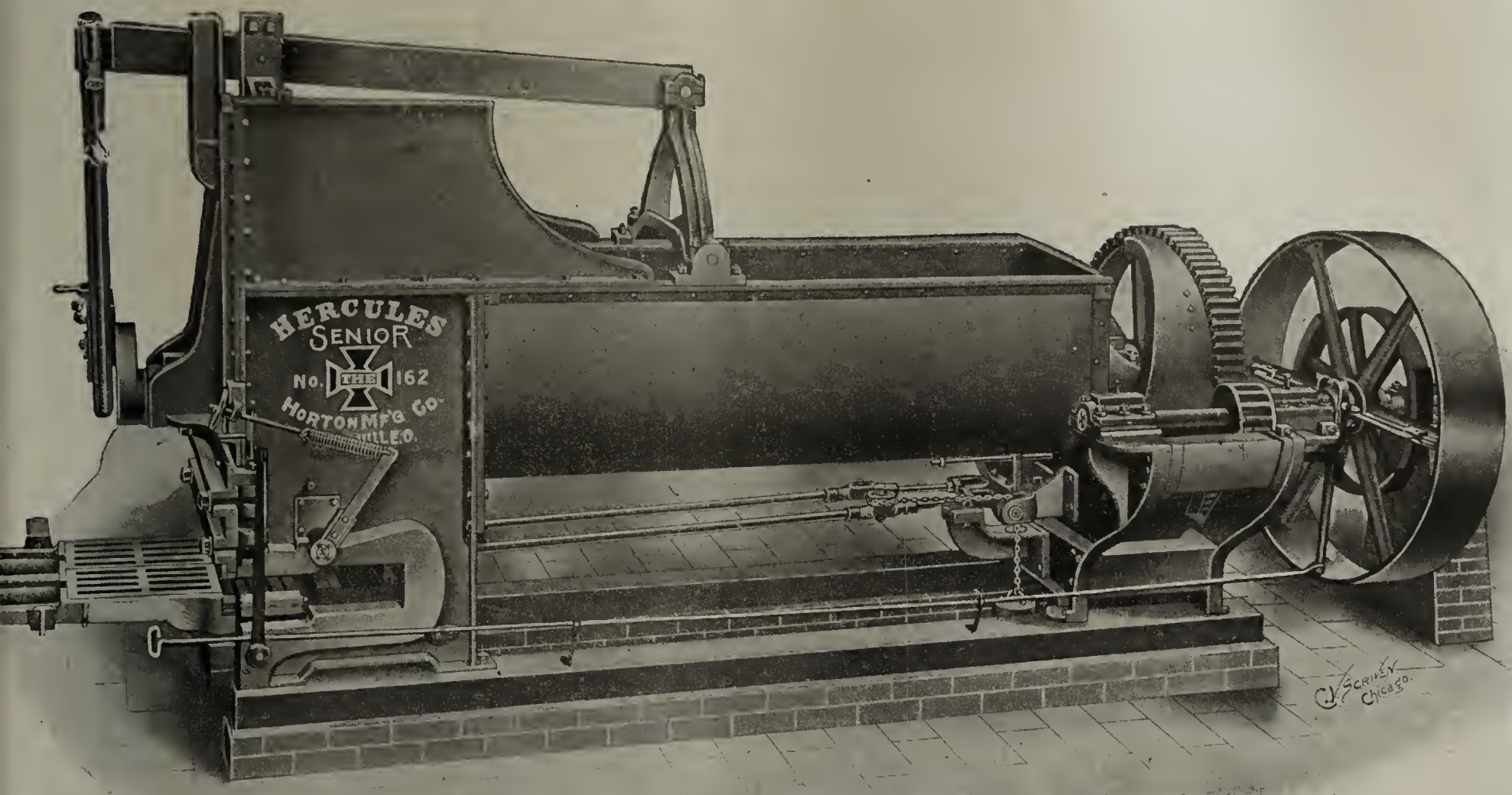

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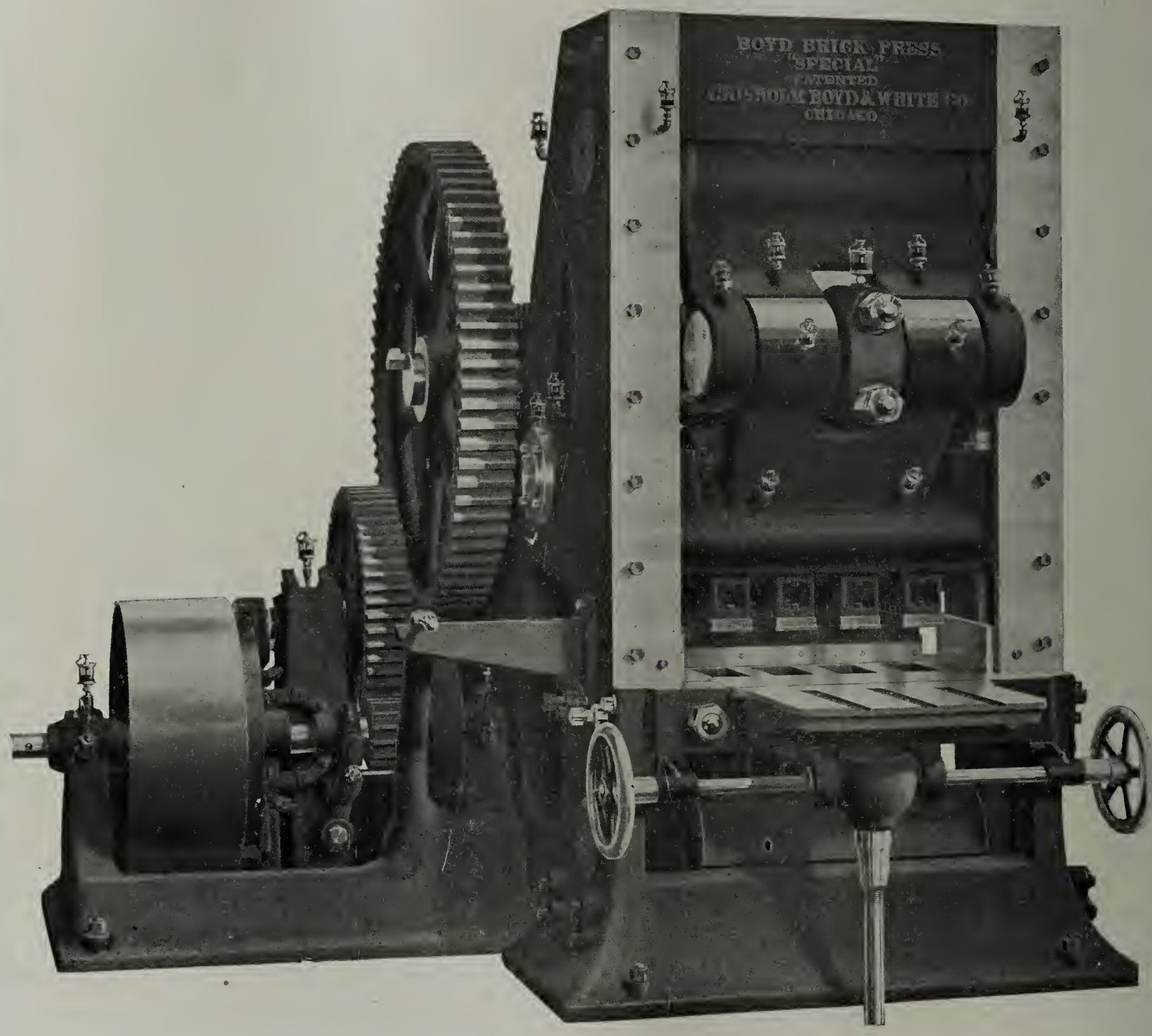

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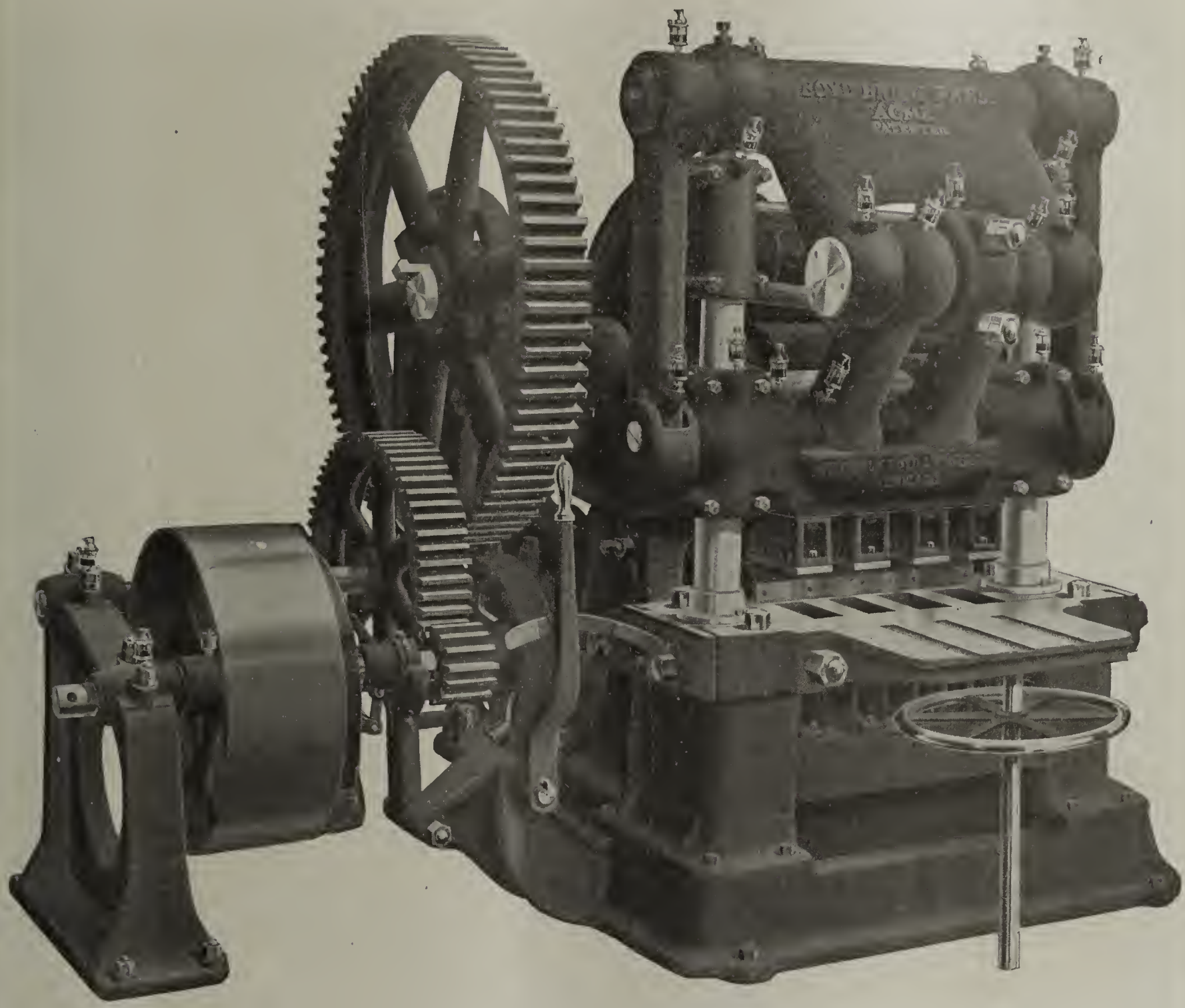

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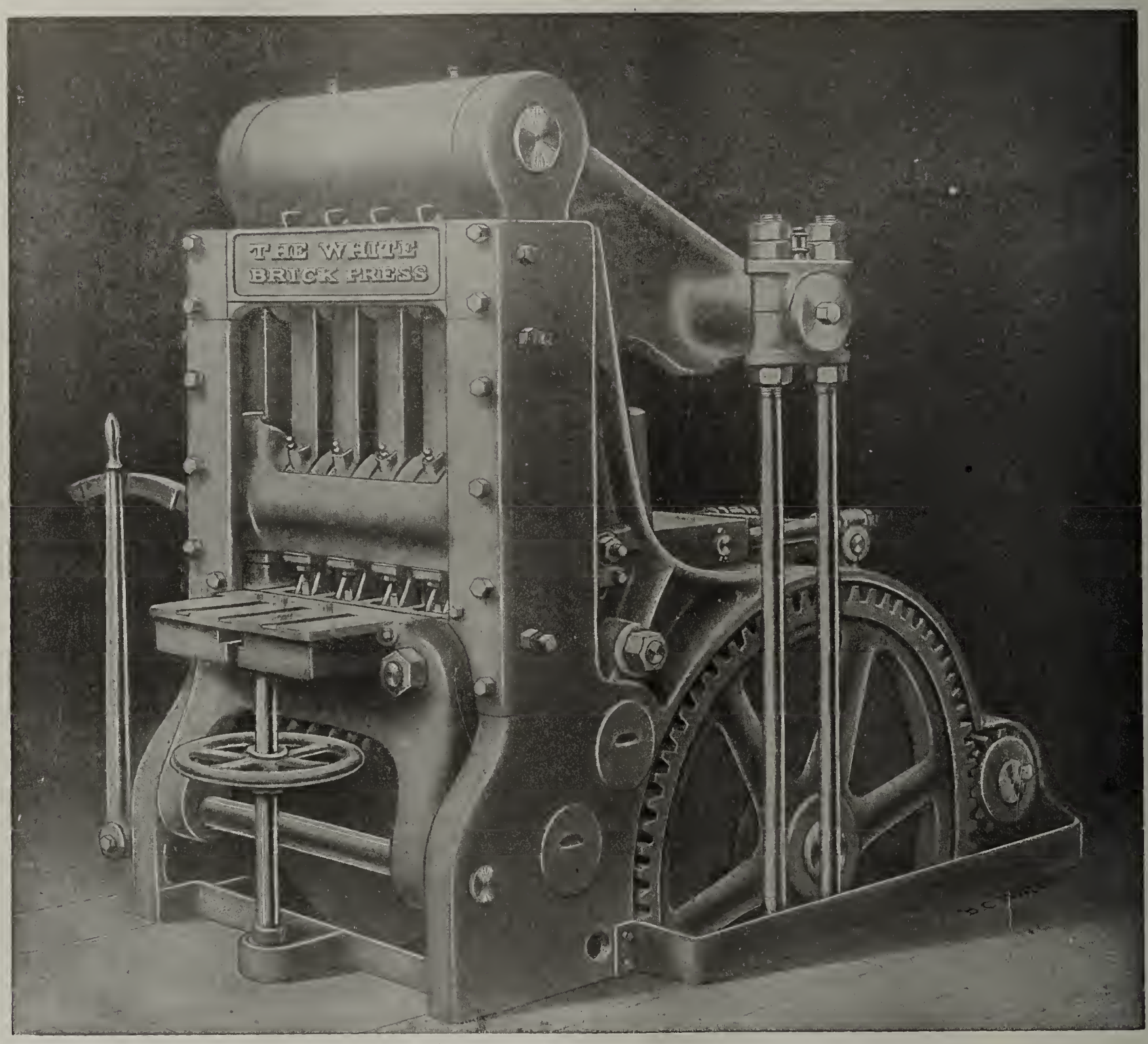

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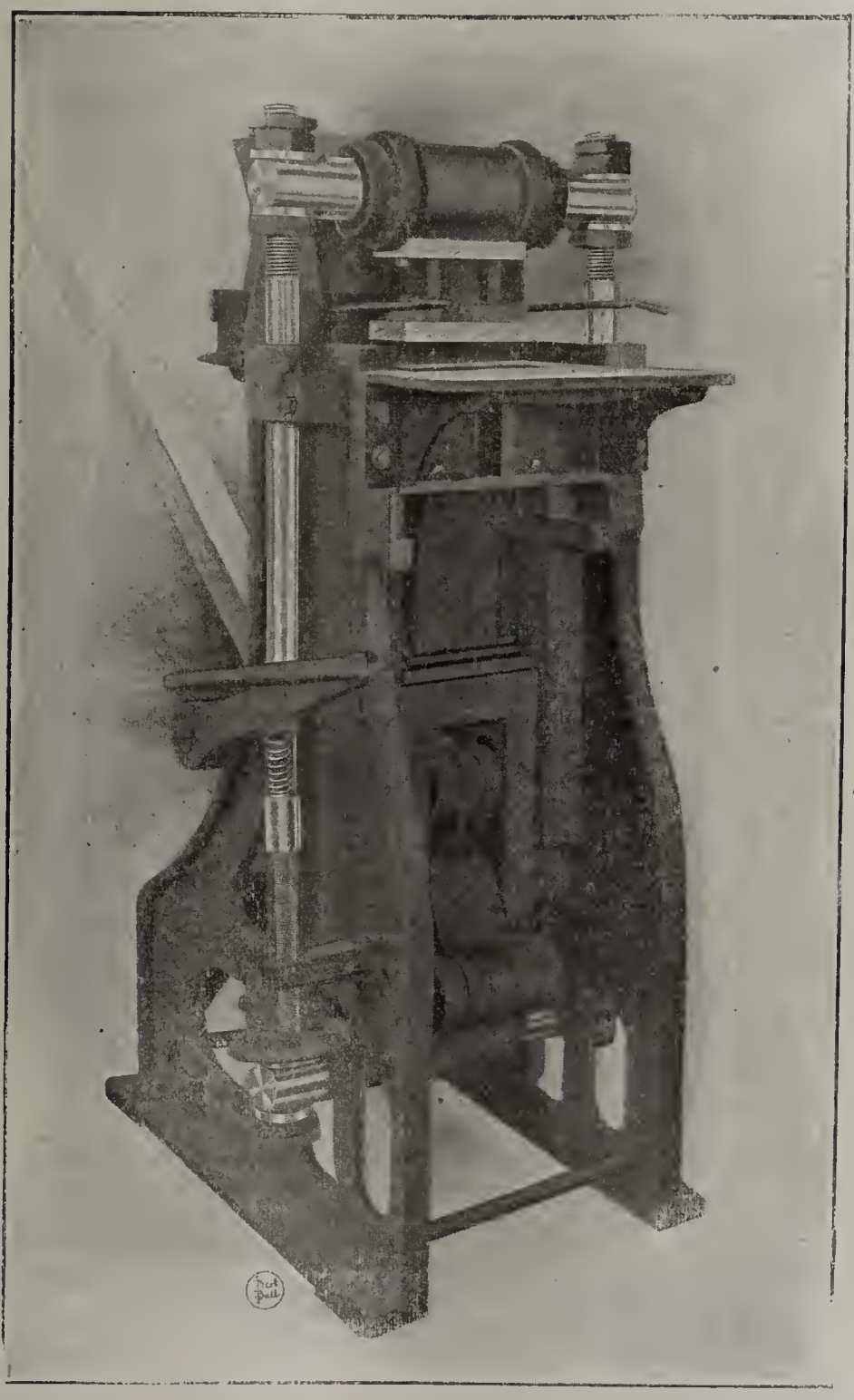
BRICKS



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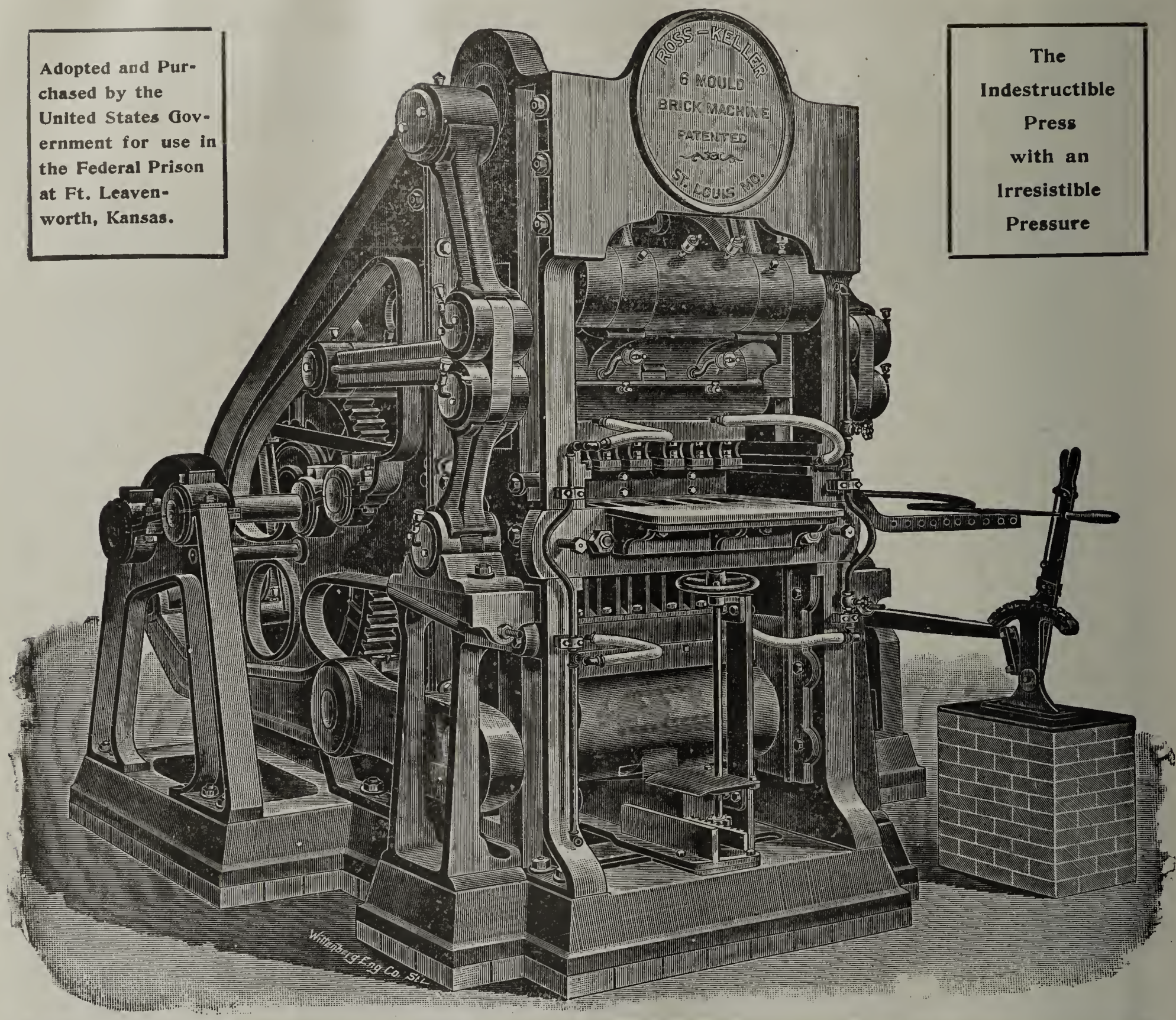

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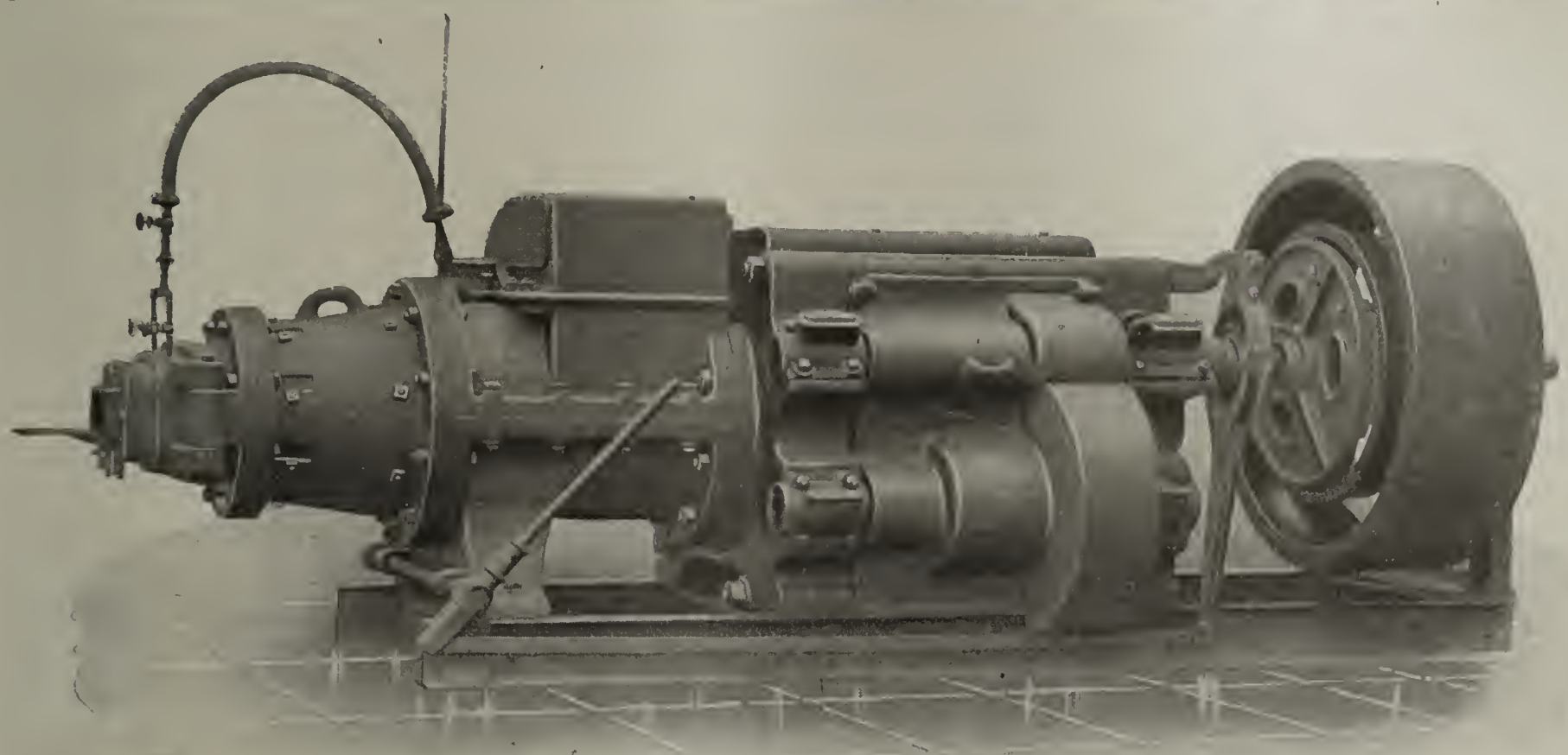

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Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

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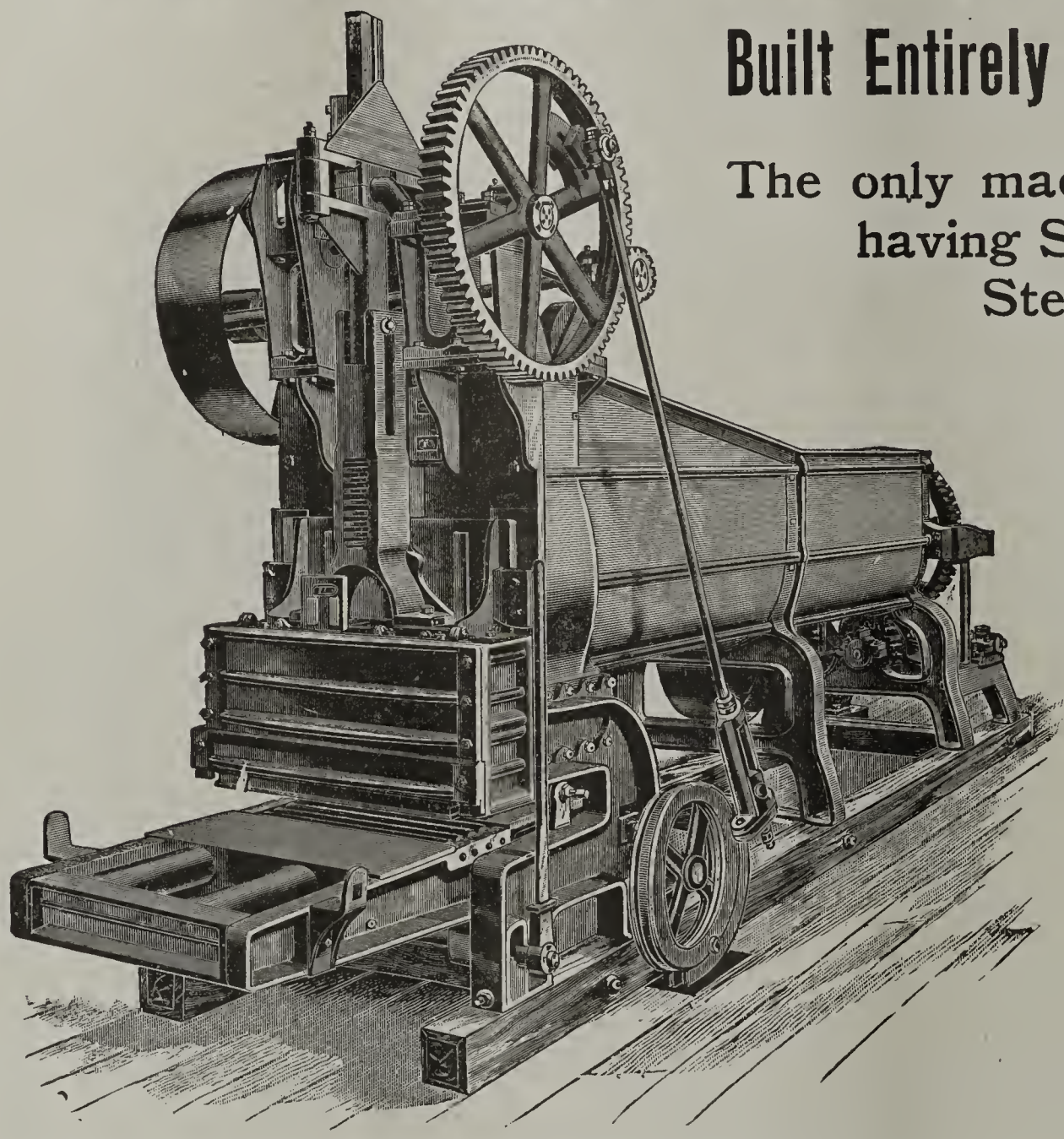

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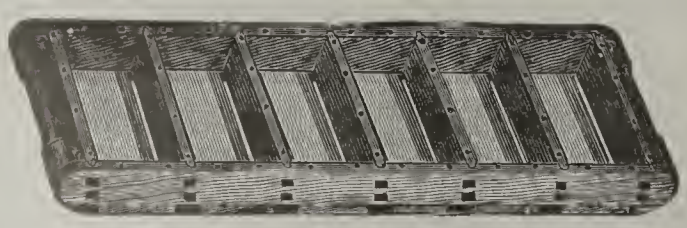

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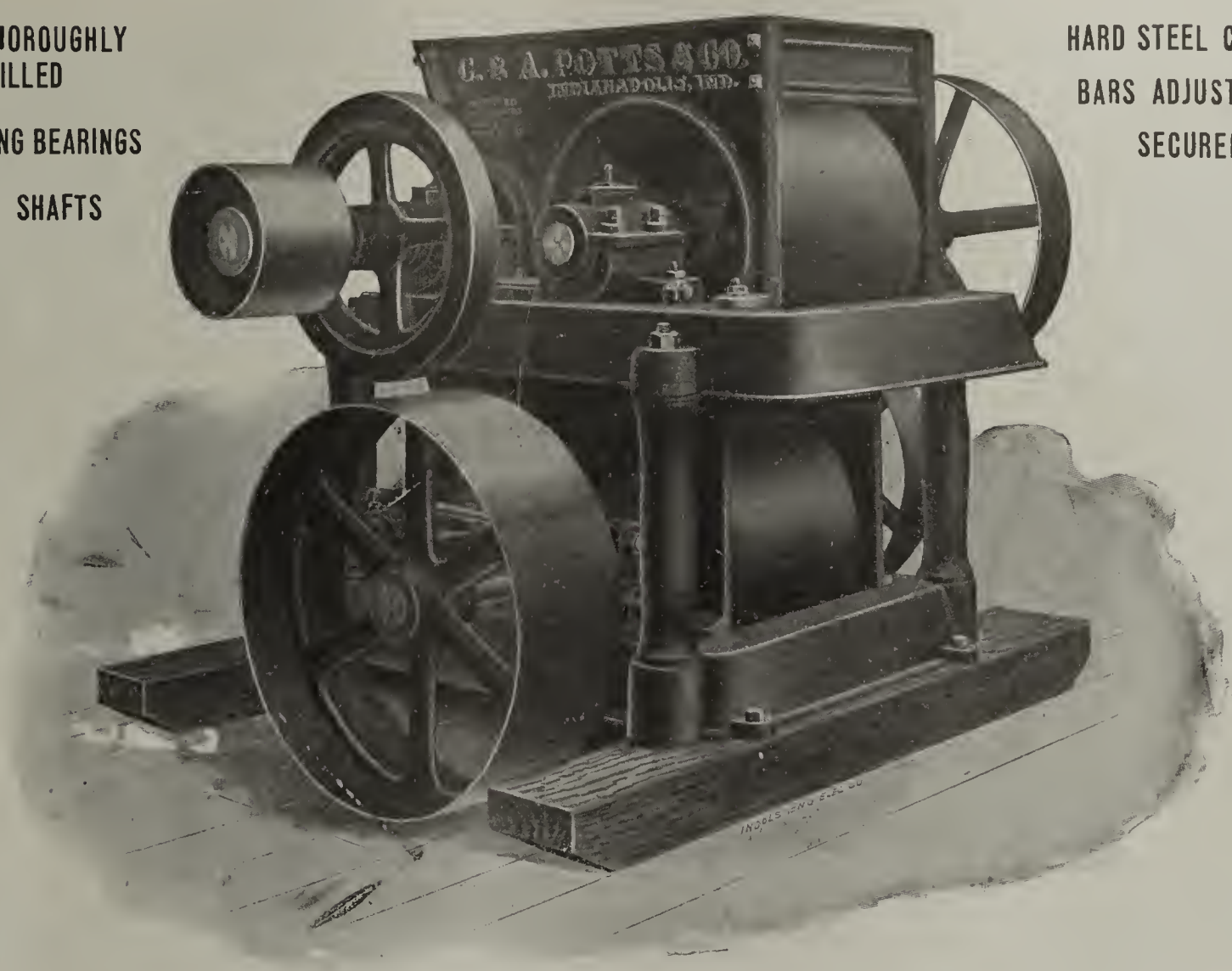

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Potts Disintegrators will work the clay direct from the bank.
Will not choke or clog from hard, dry or wet, sticky clays.
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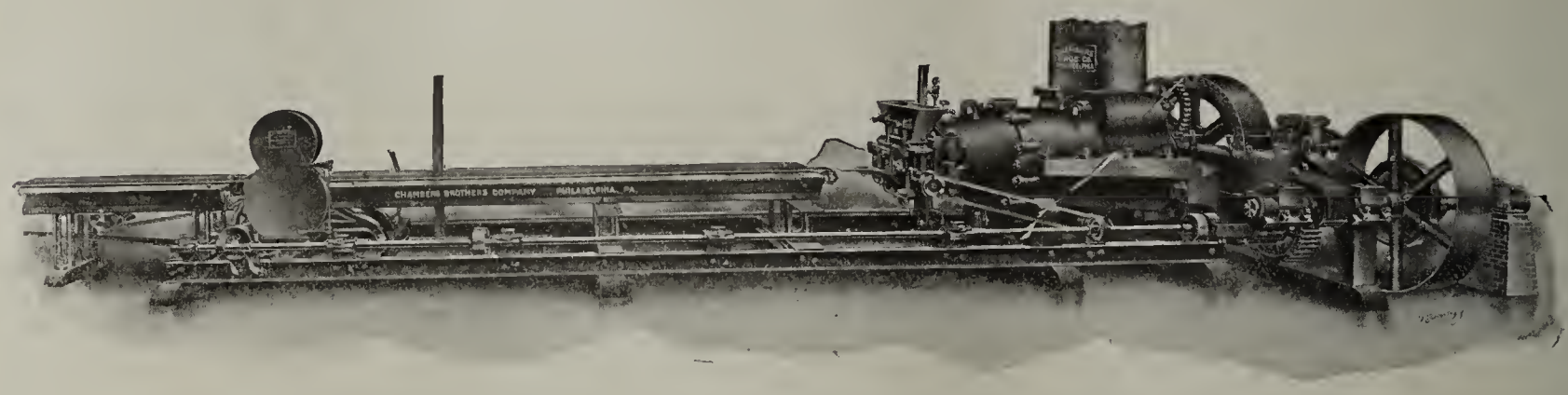

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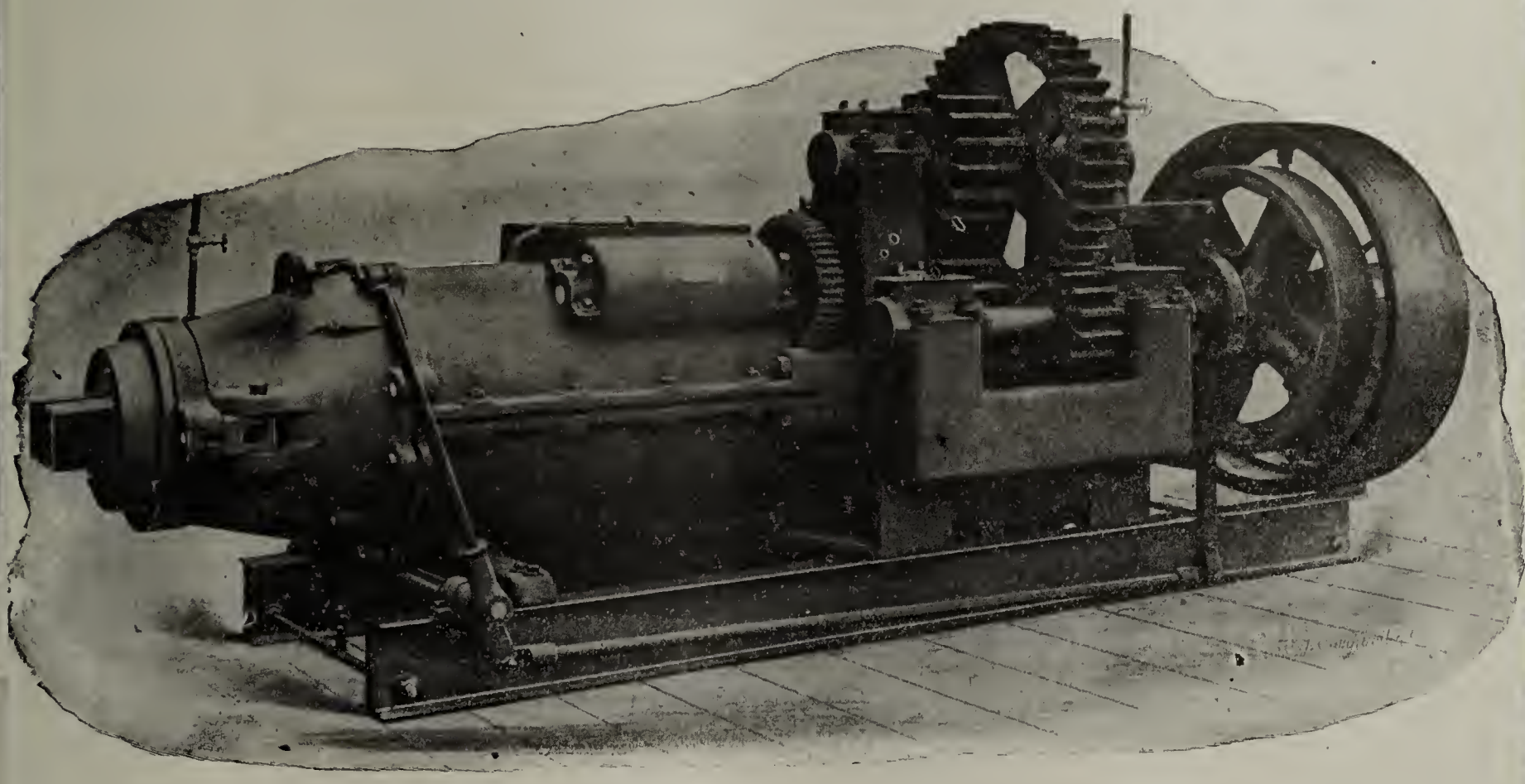

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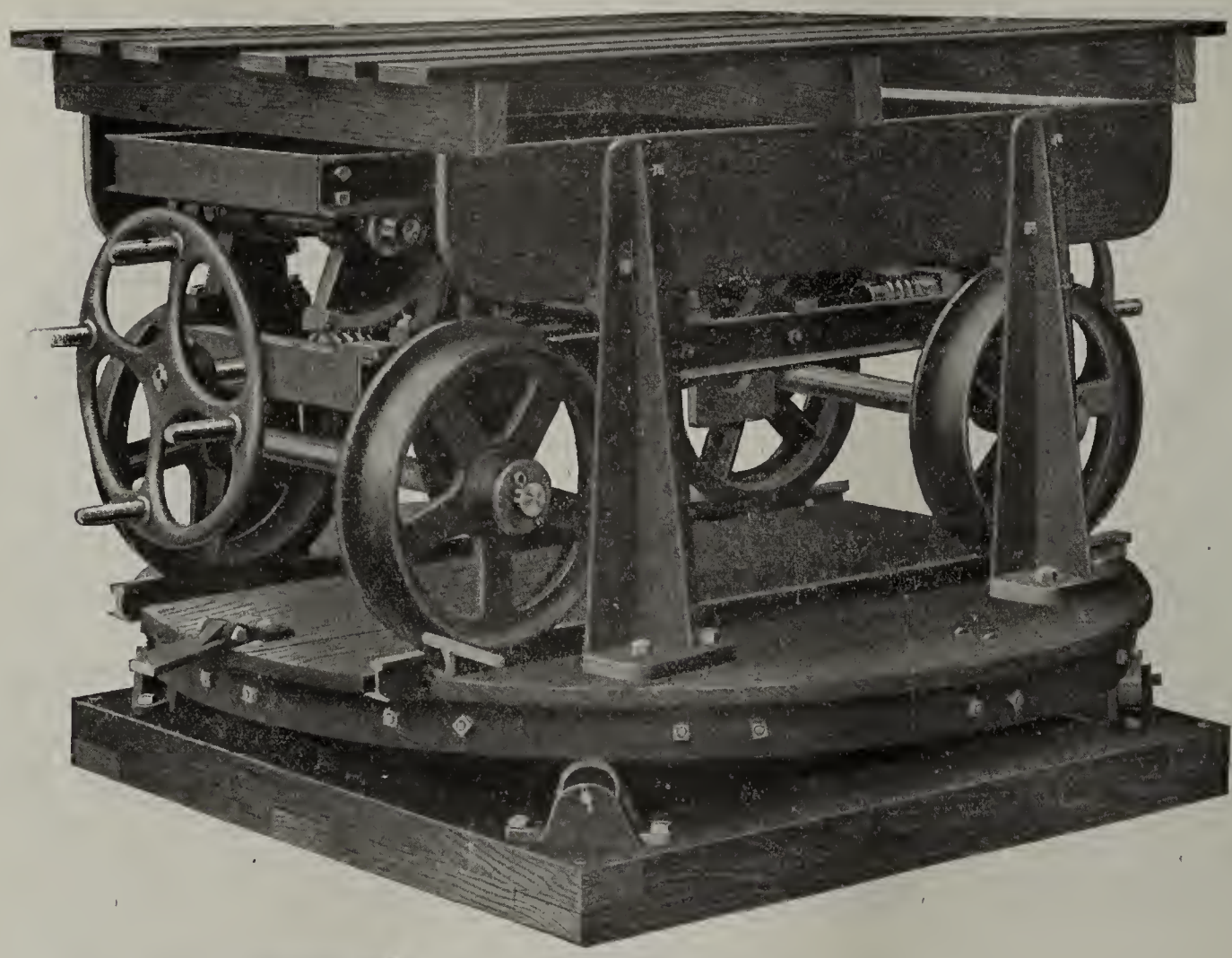

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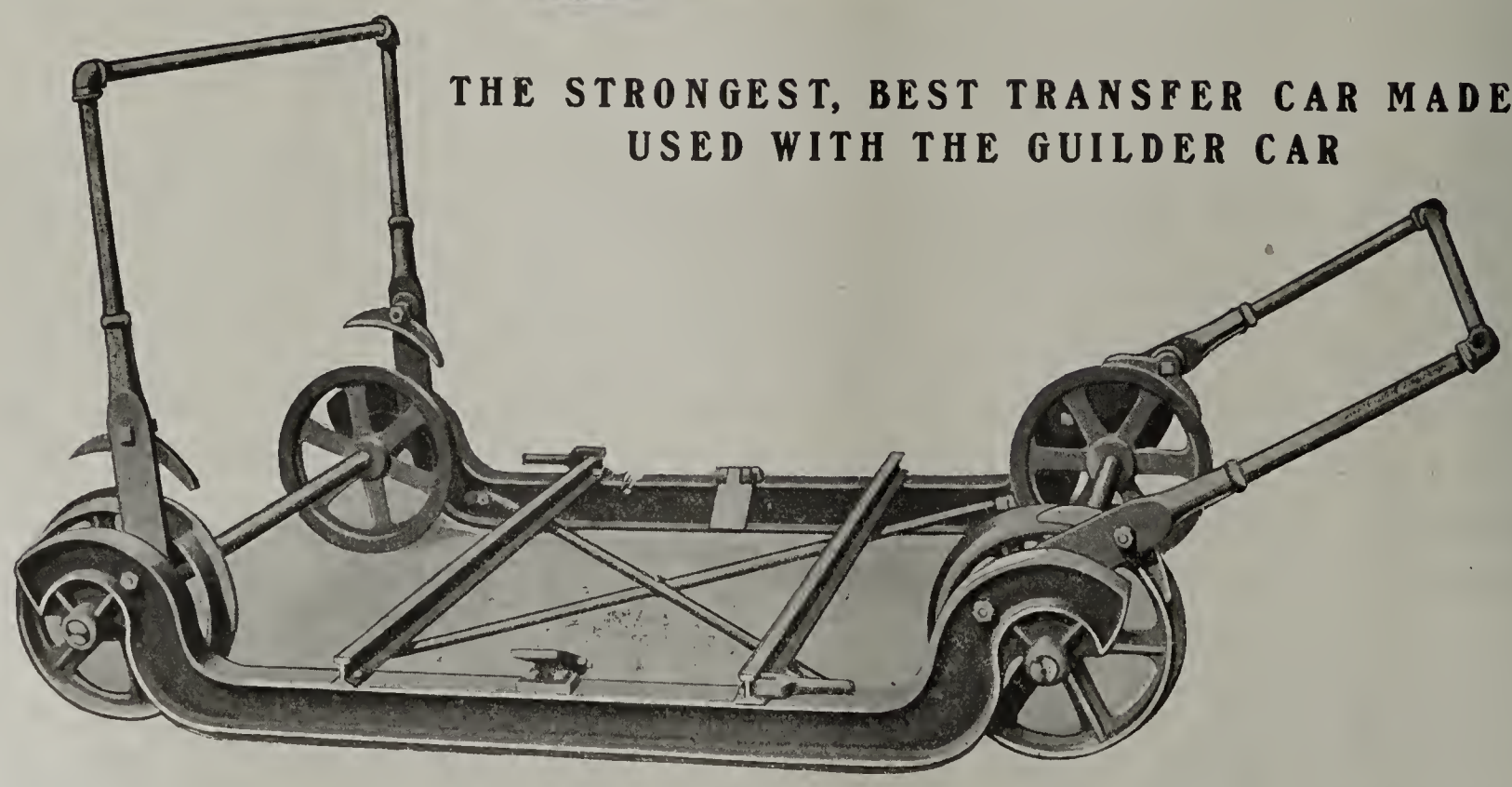

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CLAY RECORD

Entered as Second-Class Matter January 25, 1893, at the Post Office at Chicago Ill., under Act of March 3, 1879

Vol. XXXV. No. 11. CHICAGO, DECEMBER 15, 1909 Semi-Monthly, $1.00 per Year Single Copies, - 10 Cents

THE COST AND ADVANTAGE OF USING BRICK

By J PARKER B. FISKE, S. B.
Flatiron Bldg., New York

Many people have the idea that brick cannot be advantageously used in the construction of a modern sized country or village house and that it is adapted only for factories or store houses on the one hand or apartment houses, business blocks, or very expensive mansions on the other, the opinion being prevalent that a brick house must necessarily cost a great deal more than one of frame.

While it is true that a brick building is slightly more expensive than one of frame, the difference is far less than is generally realized, and the practical, as well as the easthetic advantages of brick so far outweigh the slight increase in initial cost as to make it the more appropriate and desirable material.

In discussing the comparative cost of different forms of construction it must be understood that no figures can be given which will apply with equal accuracy to all parts of the country, as the relative cost of different materials and different classes of skilled labor vary in different localities. Thus, the frame house, as to first cost, would make a much more favorable comparison with brick when built in Maine near the lumbering centers and far distant from the brick yards, than it would be when built in the great brick-making state of Ohio, where the freight is high on lumber and little or nothing on brick.

In order to discuss this matter intelligently, therefore, a certain representative locality must be selected and from the comparative cost of different styles of construction in this locality, modifications can easily be deduced by the architect to suit other local conditions. With this idea in mind we have prepared the following figures, taking as a basis, a frame house costing $10,000 and built in New Jersey within 25 miles of New York City.

In preparing these figures we have had the advice and assistance of several New York architects of high standing and unquestioned authority and several contractors who are familiar with country house construction.

Taking this house as planned entirely for wood and leaving the inside arrangement and finish untouched, we show approximately the comparative cost of varying the outside construction as follows:

(A) $10,000. Frame house.

(B) $10,500. Stuccoed on expanded metal nailed to wood frame, lathed and plastered inside.

(C) $10,750. Hollow terra cotta blocks for outside walls, stuccoed on the outside and plastered directly on the inside.

(D) $11,000. Solid brick outside walls, plastered directly on the inside.

In the above list, the frame house is, of course, of the smallest initial cost, but the prospective home builder who adopts it for this reason will find that it is the most expensive in the long run. It needs constant painting and repainting, entailing a large fixed expense. Even the best lumber obtainable today soon begins to give way or rot out in places. If not painted and repaired, the house soon becomes dingy and unsightly. It is the most difficult to heat. Cold in winter and hot in summer, it is the most uncomfortable of any house to live in and it is liable to burn down at any time. While the cost of painting and repairs is merely nominal for the first year or two, it increases in rapid progression from year to year. Failure to promptly meet these expenses, will result in a correspondingly rapid depreciation in value either for sale or comfort. These expenses within five years will have amounted to as much or more than the difference in first cost between wood and brick, and if conditions compel a sale or desire dictates one, the first cost of the wooden house can rarely be obtained, while the brick house has been growing better and more beautiful each day and has therefore increased in value.

The stucco house seems to be having its day just at present and to be meeting with favorable consideration from some architects and owners, but we believe that a careful study of its characteristics will show that it has no advantage over a wooden house unless it be that of appearance when first constructed. The clean light walls and comparatively low cost have made it appear attrac-

tive, we believe, without a full consideration of the ultimate results of its use, especially as it is a new type of construction and has not as yet been stamped as wholly good by the seal of Time.

By stucco walls we mean those that are constructed with a metal base supported by wood and coated with layer of cement mortar. When first completed such a building looks inviting with its light walls and its red roof, but Time soon lays its disfiguring hand upon it, soils its once light surface to a dingy gray and irremediably streaks and blotches it with dirt; cracks develop because of the shrinking of the timbers supporting the metal base and its stucco surface; leaks appear here and there and ere long the stucco begins to drop off and cannot be renewed without unsightly spots and an indication of early depreciation.

The surface of a stuccoed frame house suffers less in a dry than in a moist country, but some dampness is constantly being transmitted by the stucco to the metal lath and the rusting process of the latter is slowly but surely going on. In many instances the metal lath rusts and stains the stucco—in others it rusts away entirely and the stucco drops off. When this occurs, patching is impractical, and the only remedy is to re-lath and re-stucco the entire surface.

The advocates of the stuccoed house often point, with assurance, to the permanency of the stuccoed buildings of Europe. They neglect to mention the fact that the only permanent stucco work of the Old World is that which was applied upon brick walls, and that much of even that construction has required patching from time to time. The recent American innovation, however, of putting a thin layer of porous stucco upon a frail metal fabric, which in turn is mounted on wood, is an entirely different matter. The inevitable shrinking of the timbers and the rigid character of the stucco supported thereon combine to make this construction about the most unmechanical and illogical that has ever been seriously considered.

Even when the added expense is incurred of using hollow clay blocks for the exterior walls and cementing on them, the same results are sure to occur sooner or later, as the expansion and contraction of the burned clay base differs from that of the cement and it is only a question of time when cracking and peeling will result.

When we have sought an honest expression of opinion from practical builders of experience, as to the value of cement for exterior wall construction in good residential work, we have been met with the statement that this construction is too new to warrant a prediction as to its ultimate life or value. The chief argument in its favor at present seems to be that it is attractive, not much more expensive than wood and saves the cost of repeated painting. No argument is made in favor of its being more comfortable to live in, cheaper to maintain, or safer in case of fire. The undeniable fact remains that it is still in the experimental stage and may prove most expensive and disappointing to him who adopts it.

We come now to Brick, the most durable, the most artistic, and, in the end, the least expensive material for the walls of first class and permanent buildings. Brick meets every requirement. It is absolutely repair proof; there is no painting, no patching, no expense of any kind for generation after generation on a good brick wall. The walls are not combustible, as the brick have been through a white heat for days in their process of manufacture. The item of insurance expense alone is so much less on a brick house that it much more than covers the interest charges on the difference in first cost. A brick wall makes a house cooler in summer and warmer in winter. It gives no chance for lodgment of vermin. It reduces heating bills, repair bills, and insurance bills.

We will not take much space here to discuss the folly of non-fireproof construction for the American home—it is too large a subject. The country is rapidly awakening to the almost criminal waste occasioned by the use of a construction whose only excuse is a slight saving in the initial cost. Statistics show that in the year 1907, which may be termed a "normal" year, actual buildings, and property, destroyed by fire were valued at $215,000,000.00; that we spent about $300,000,000.00 in the maintenance of fire departments and apparatus, that we paid out $195,000,000.00 to the fire insurance companies, of which we received back only $95,000,000.00; on other words, that the cost of fire, directly and indirectly, was over $600,000,000,00. With all our phenomenal growth, our tremendous booms and vast amount of building construction, the most active year we have ever had netted is about $615,000,000.00 worth of new buildings and alterations, so that with all our boasted progress, we produce buildings and alterations, equal in money value to only a trifle more than the value of the property that we lost by fire. Furthermore, it is appalling when we consider that fire has cost us as many as 7,000 human lives in a single year.

Europe has long ago learned better. The cost of actual combustion and destruction of property in this country is equal to a tax of $2.30 per capita per year. The average corresponding tax in Europe is a trifle less than 35 cents per capita. Truly, we have much to learn of the older countries, and a study of the reason for their superiority will lead the student directly to the fact that throughout Europe the almost universal building material is BRICK. —"Copyrighted 1909, by J. Parker B. Fiske."

FRANK A BROCKWAY OPERATES AIRSHIP.

Frank A. Brockway, Newburgh, N. Y., of the well known brick manufacturing firm, is the first in this section of the country to build and operate an airship. Mr. Brockway made a successful flight of about eighty feet one day last week, and after making slight adjustments to parts of the machine, he intends to make another trip.

The American Brick & Tile Co., Morenci, Mich., shut down their plant so as to put in some new equipment, repairs and a general overhauling. A new engine and tile mill are among the things being installed.

A METHOD OF OVERCOMING THE SULPHUR PROBLEM.*

By H. B. Wells, Ironton, Ohio.

The presence of sulphur in clays and its elimination with good results has been and will be a subject of much discussion. Sulphur probably causes more trouble than any other element occurring in clays, especially so where the product manufactured will not justify an expensive preparation of the clay. It is not only troublesome during the process of burning, where it causes discoloration and distortion in defective burning, but in many cases where the burning has been successful sulphur is the cause of surface discoloration or scum. This latter case we will not touch upon at this time, as that is a problem by itself, but we will deal with the burning only.

We have had papers read before the society covering the carbon and sulphur problem which have been based on laboratory experiments and which have been an invaluable guide in overcoming the trouble arising from these two elements. What is to follow is based on the problem as it confronts us in a commercial way. The method of experimentation is not a very commendable one as it is very expensive, but the plant where the experiments were made, like many others which manufacture crude ware, did not have the luxuries of a laboratory, a test kiln and a pyrometer, so there was no other alternative. In fact, a test kiln would not have been of much value to us, as the effect of the mass would have been lost, which was very important.

The plant to which the writer refers is operated by the stiff-mud process, manufacturing brick and fireproofing. There being practically no difficulty in making either of these products and getting them into the kilns, we will confine our remarks to the burning. There was also no difference in the burning of these two products, with the exception of an extension of time for the brick, so that the general principles apply to both. The wares were burned in round down-draft kilns 30 feet in diameter.

The system of burning which had been used previous to our experiments was to start with low fires and gradually increase them till the burning was completed. During a great part of the time volumes of sulphur fumes would evolve from various parts of the kilns and from the stack. The fumes were still evident for several hours after the firing had been completed. The results of this method were anything but satisfactory, as a large per cent of the product was taken out of the kilns in chunks and carted to the dump. The drawing would show that the contents for about four feet in was a little underburnt, then for a few feet the ware would be all matured while the center was very much overburnt, being stuck together and out of shape. By breaking a piece of the over-burnt ware, it showed a very black, spongy core from which the conclusion could be easily drawn that some gases had formed on the inside and could not escape on account of the outside shrinking too soon and closing up the pores.

We are somewhat handicapped by not having a total analysis of the clay, which is of cretaceous origin, having pebbles of iron sulphide distributed all through the bed, but we are fortunate enough to know the sulphur content, which is 1.82 per cent. Since the scumming of the product is by no means excessive it is safe to say that the larger part of the sulphur is present in the form of FeS_2.

Knowing from past experience that the sulphur in the FeS_2 oxidizes at two stages, the first molecule at about 400 C. while the last remains until about 900 C., and that this oxidation will take place properly by careful regulation of the air, we started to work by bringing a kiln up to a dull red heat and letting the fires die down at this point, merely keeping them alive, thinking by so doing the oxidation of the sulphur would take place at a slow rate. We did not attempt to close up the fire boxes and other air inlets, not wishing the heat to go back too far, but before we realized what was going on, the kiln had attained a bright red heat. Ceasing to fire the furnaces proved of no avail, as the heat in the kiln became more intense in spite of all we could do. No more firing was done until the center of the kiln, which was the hottest, had cooled down, when enough fuel was added to finish the outside courses.

Upon drawing we found that the only advance made was that there was no under-burnt material.

Our next step was to bring a kiln up to a dull red heat, pull the fire and close up the fire boxes, leaving them in this manner until the kiln was again ready for the fire to be started for maturing the ware. As there was some difference in the floor construction of some of the kilns, this system was tried on several of them but the result was the same in each case—an over-burnt center, but of not quite so great an area as the first trial. The top courses were well burnt but the middle and bottom were as much distorted as before.

The top being good with no improvement in the middle and bottom of the center, led us to believe that the air, as it passes through the top courses, became pre-heated and more efficient, causing the oxidation in the bottom to take place too rapidly, so we made some experiments with the setting, that is, set the bottom courses more open, thus allowing a greater draft, having a tendency to carry the air through much faster and not allowing it to become so hot. This did not have the desired effect, as the over-burnt middle and bottom of the center were still there.

On the next kiln we carried the problem one step farther by closing the kiln before it had attained a dull red heat. As we had no pyrometer to indicate the temperature, this had to be done by guesswork. Knowing the time that usually elapsed between the evolution of the first molecule of sulphur and the attainment of a dull red heat, we divided this time in half and closed the kiln up at this midway point.

The kiln advanced at a much slower rate than in any of the previous burns, but even this time the kiln reached a bright red heat in the bottom and middle, but not so much as before. The drawing showed a decided improvement but a portion of the kiln was still unmastered.

The next kiln was closed up as soon as there was evidence of sulphur fumes. We were a little in doubt as to whether the kiln would advance in heat, being closed up at such an early stage, but, to our surprise, it did increase very slowly

* Read at the last meeting of the American Ceramic Society, which was held at Rochester, N. Y.

and at a rather uniform rate. It gained an intense heat in the bottom but covering less area than any we had tried so far. On drawing, we found a bad place where we had expected it from our external observations.

What to do next was rather perplexing, but having come so near the solution of the problem, we were not willing to give up. The central part of the kilns being the point of contention, we concluded that if it were possible to admit air at this point at a low temperature and prevent the hot gases from passing through this one central point, we would have mastered the situation. Being willing to try most anything, the exhaust fan, which was connected with all the kilns, was put into play. We handled a kiln as before except that the gases were turned into the fan instead of the stack during the oxidation period, thinking that the gases and air passing through at a rapid rate would have a tendency to keep the temperature down and cause a slow oxidation. Such was not the case, however, as the result was nearly as disastrous as some of our first trials.

At this point we began to think that we would be unable to burn the clay in down-draft kilns. Knowing that the gases were not under accurate control in the up-draft type, our attention was turned to reversible kilns, and we conceived a plan to carry out the idea with the kilns we had, which was to open up the top of the kilns during the oxidation period. This would allow the gases from the top courses of the ware to escape first and, by going directly into the atmosphere, they would not pass through any of the other ware and give off heat which would cause a rapid oxidation in other parts of the kiln.

At first we were in doubt as to what point in the oxidation we should open up the top of the kiln, but, as we were more willing to increase our fuel bill, if necessary, rather than endanger the ware, we brought the next kiln up to the ignition point of sulphur, when the fires were allowed to die out and the fire boxes closed up, the openings in the crown uncovered and the gases shut off from the stack entirely. The heat advanced rather slowly but it moved gradually from the outer courses toward the center, giving no evidence of becoming too hot at any point. The sulphur gases kept passing off for several hours after the black core had all disappeared from the trials. When they had ceased, the top of the kiln was closed, damper opened to the stack, and fire started and carried in the usual manner for the completion of the burning.

The result of this method was practically a uniform burn throughout. The bad place which we had been fighting in the center had all disappeared. No sulphur fumes could be seen after the burning was complete.

During our first experiments, we thought that the evolution of sulphur after the firing had ceased was due to having the dead coals in the fire box. This undoubtedly produced some of the gas but, upon cleaning the fire on several of the kilns at the end of the burning, there was no apparent reduction in the volume of gas. This showed conclusively that the sulphur in the clay was the cause of our trouble.

There is no question but that the carbon played some part in the imperfect oxidation, but the black core, which is largely due to carbon, disappeared long before the evolution of the sulphur ceased. As the ignition point of the carbon, which is about 700° C., is midway between the ignition points of the two parts of the sulphur, the former would take care of itself if we could control the latter.

After having satisfied ourselves that the above method was successful by burning several kilns in the same manner, we came face to face with another obstacle, which was that we were not turning our kilns over fast enough to keep up with the capacity of the plant.

This called for further experimenting, the outcome of which resulted in the covering of the top of the kiln before all of the sulphur had passed off, which advanced the heat in the bottom much sooner than we could produce the same heat from the fire boxes with no sulphur in that part of the kilns. Much care had to be exercised in judging the proper time for action in order not to start the fires too soon and ruin some of the ware. After watching several kilns closely, we were able to pass this point with safety.

Our experiments resulted in our adopting the last mentioned system which, to the writer's knowledge, has been used for two years with much satisfaction. It is not, however, a commendable method for all clays which contain sulphur; but where they contain a very large amount, it is one solution of the problem.

EISENHART SAYS HE WILL NOT REBUILD BRICK PLANT UNTIL HE CAN GET FAIR DEAL.

Rumors have been circulated thick and fast in Horseheads and Elmira, N. Y., of late that R. G. Eisenhart, general manager of the Horseheads Brick Company is making arrangements to move his business to some other locality.

The plant in Horseheads was badly damaged by fire a few weeks ago and Mr. Eisenhart stated at that time that unless the residents of the village granted him certain concessions he would be compelled to move his business.

When interviewed regarding his plans for the future Mr. Eisenhart said the action he took in the future would depend largely upon the attitude of the residents of the village.

Mr. Eisenhart stated that he had intended to rebuild his factory, but that before he decided to do so it was quite necessary for him to secure permission to build railroad switches on property adjoining that already occupied by his plant.

He says that he had met certain opposition that had handicapped him in the past and that unless satisfactory arrangements can be made with the owners of the property adjoining his plant he would be compelled to move to some other location. He says that he is willing to pay a fair rental for the property he needs, but that he refuses absolutely to be imposed upon in the matter.

The Kenilworth Brick Co., Newell, Hancock Co., W. Va., will close down Christmas for 30 days so as to make some necessary repairs. The plant will be given a general overhauling.

BRICK OF QUALITY ALWAYS IN DEMAND.

The ever increasing number of building materials has not in any way affected the demand for brick of quality. There is much significance to be applied to the latter term, in as much as the continued activity for this commodity will depend in a great measure on this single attribute. Combined with quality is the pleasing appearance of the face of the brick, which is and can be made equal to all other forms of attractive and durable building materials.

There is much stress being laid at the present time by architects, contractors, builders, and owners on the attractiveness of the structural materials in use today, and there is at least a similar endeavor being displayed by a large number of brick manufacturers to meet this demand in a way that will increase the sale of their output. It is both pleasing and notable that in this respect there has been a wonderful advance made, and that the field of endeavor in this respect has by no means attained its highest form. Newer designs in face brick are being placed on the market continually, and the development of the clay brick in this way has been such as to cause not only admiration but has likewise increased the demand to such an extent that the future in this respect looks most favorable for the brick manufacturers.

Enamel brick are now being used in many minor strucures, while in larger buildings, where there is special stress laid on the decorative appearance of the same, there is a larger number in use. The enamel face brick has some peculiar advantages that will continue its popularity, being easily cleaned, admirable for dark recesses, and in other respects making it appeal to the building public in a manner that is sure to make it one of the increasing styles of face brick in the future. There are other new faces in clay brick that are increasing in general usage, and these are in many cases a vitrified brick, having a number of colors, so that there can be combinations formed that will give a structure a distinctiveness of its own; a feature that is much sought after now.

There seems to be but one serious drawback to the general class of decorative face brick, and that is the high cost of the same. While it is a fact that the manufacture of the best face brick is in a great measure costly, the high price is sure to make their increasing demand somewhat less than it would be could they be made and sold at a reduction. The demands of the age are for such building materials as will be both attractive and reasonable in price. There is a dearth of ordinary structural materials on sale today, and the prices often attract, simply on this account, and the sales naturally increase, though the merit of the commodity be lacking, in a degree. The average builder wishes to make his abode, or is business structure as distinct and as artistic as possible, while not spending on the same any more than he can, and for this reason there is a larger demand today for such materials as will make this possible, without having any special merit as to durability.

What does the average builder know of quality or of durability when it comes to structural materials. The outward appearance is more often his secret reason for desiring its use than its intrinsic value, and there are many instances of where this factor has constituted the use of some materials. This is unfortunate, because when a man is once deceived in a structural material, it is difficult to make him believe that any commodity in any respect resembling it, can be other than the same, as far as actual merit is concerned.

On this account it is unsafe for the legitimate brick manufacturer to place on the market materials that have only as their value a pleasing appearance. It must be understood that the competition is now so marked that in order to meet it on terms of equality there must be more than an outward appearance to insure its permanency as a staple structural material. In addition to the attractive features it possesses it must have merit to make its increasing sale possible. This can be obtained, and there is wisdom in every brick manufacturer noting and adhering to this idea in manufacturing his commodity.

The sale of the ordinary brick is large, and there will continue a strong demand for the same in the future, but there is likewise a much larger demand now for brick than can appeal in an artistic sense to the building public. This field of endeavor has not been looked into as yet by a great many operators. They have contented themselves with adhering to the ordinary styles of brick, and have been satisfied to let the limited few take care of the fancy brick demand. Now that this demand is making such progress it would be well for others to give it some consideration. In doing so, there should be an effort for a greater variety of artistic brick that have features peculiarly their own, and still that can be sold at a lower cost than many of the fancy clay brick are bringing now.

There are two important considerations for the manufacturer of clay brick today. These are, first, actual quality to his output. His clay must have merit, and his plant be so equipped that this can be made a factor. Then his help must be intelligent and particular. The next consideration must be the price at which the brick can be sold. If it is possible for him to manufacture a pleasing brick, and still keep the price reasonable, there is sure to be a demand for his output that will enlarge his operations, and make his brick of such value to the building world, that there will be no danger of his output being a drudge on the market, and one that will take its place with others that are now classed as common brick, of which there are an ample sufficiency for all purposes, with some to spare.

CALENDARS FOR 1910.

The first calendar for 1910 that has been sent to the CLAY RECORD is that of the Scott Manufacturing Co., Third National Bank Building, St. Louis, Mo. It shows the earmarks of Mr. Scott, the president of the company, for he never does things by halves.

The Scott Company are builders of the Andrus Brick Press and a general line of brick-making machinery, supplies and repairs. They have a well equipped shop and have the name of getting out work very promptly.

THE DIESENER CLAY-CLEANSER.

The Diesener Clay Cleaner patented in U. S. and foreign countries is designed for making well pugged, plastic surface clay pure and homogeneous, so that even a clay, which carries pyrites, gravel, lime-stone, etc., can be used for better clay goods such as face-brick, roofing-tiles, conduits, sewer-pipes, etc.

In the construction of the Clay Cleanser only the best of materials is used and skilled labor employed. Every machine is erected, complete in every respect and tested before leaving the factory.

The frame of the Diesener machine is made of cast-iron and is designed so as to combine utmost strength with great stiffness without being clumsy or awkwardly heavy. The frame renders the machine self-contained and allows of erecting of the machine on a few timbers, without necessitating a specially made foundation; thus it can be placed in front of every suitable auger-machine.

Upon this frame are mounted the bearings for the main shaft, held in their respective positions by bolts, which slide in slots and by thrust-screws allowing of shifting the bearings in the direction of the shaft, by which motion the disk on the shaft can be brought conveniently and rapidly towards the slot-adjuster. They are well designed with a regard for long service under unfavorable conditions, fitted with grease-cups and babbitted with the best babbit metal obtainable.

The main shaft is made of cold rolled steel and either equipped with a friction-clutch pulley or with tight and loose pulleys. The hub of either the clutch or the tight pulley is carefully bored and fitted to the shaft and fastened with substantial screws and key, so as to be able to withstand the continually changing pressure of the bar of clay.

The disk is the most important part of the machine; it consists of a special iron, which after many experiments was found to be of universal applicability to all sorts of plastic surface clay; it works on fat or lean clay, on sandy or soapy clay with almost the same efficiency. Due to its special properties it will last for years, although in some plants it was worn out after 3 years, there are others where it will last from 8 to 10 years.

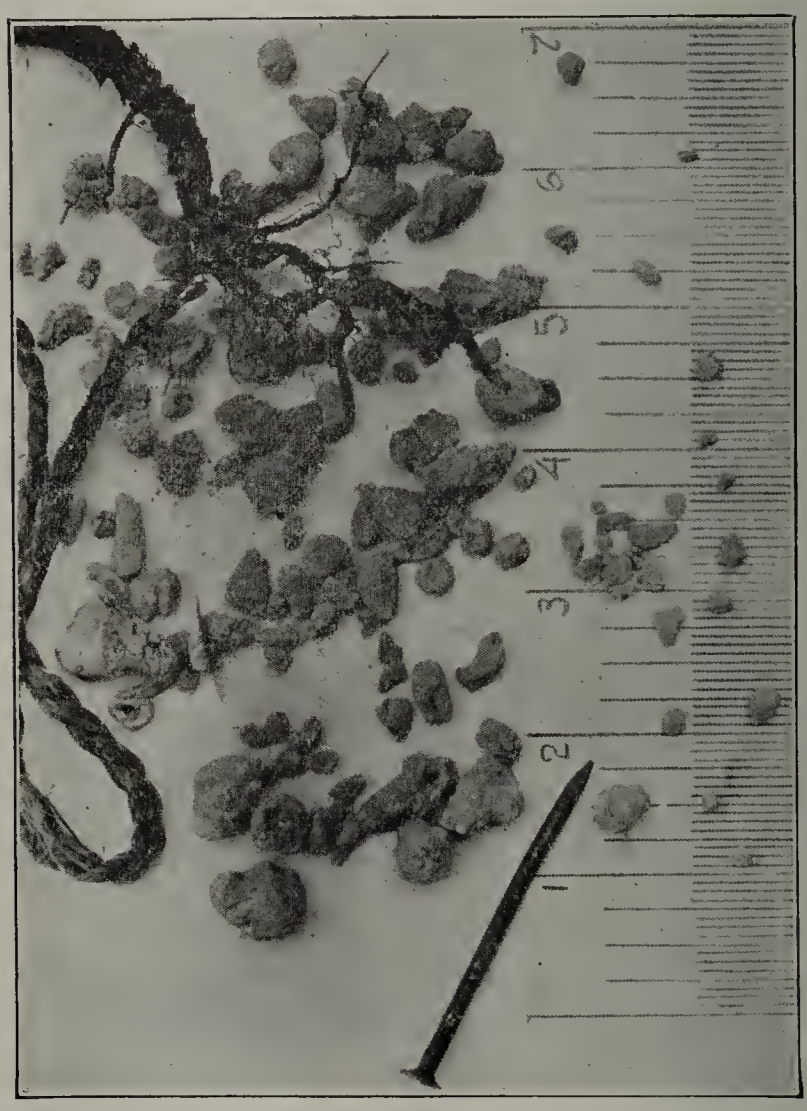
Besides the bearings for the main-shaft there is mounted upon the frame the bearing for the crank shaft, which operates the cleaning device. It is securely bolted in place and aligned with reference to the slide block, and it is equipped with grease cups and carefully babbitted.

The crank shaft carries outside of the frame a pulley, which is connected to the small pulley on the end of the main shaft by a belt, and thus has a certain speed in proportion to the speed of the disk.

The construction of the crank on the inner side of the frame is like the corresponding pulley on the other side, being very heavy to insure freedom of vibration. It has a large slot, in which a stud is fastened, the position of which can be altered towards or away from center according to the way the stone pusher has to make. Furthermore there are mounted upon the frame the roller-bracket and the slide-bracket.

The roller-bracket, which extends from the frame to the disk, is bolted to the frame and so strongly built as to absolutely obviate any vibration, which would cut down the efficiency of the machine. The inclined plane, in which the bracket ends and which forms another very important part of the machine is designed so as to allow the exchange of worn out cover-plates at insignificant expense and little loss of time, also to give a certain protection against the inevitable grinding effect of the bar of clay, to facilitate the movement of the latter; this inclined plane is equipped for lubricating by means of water.

Underneath the inclined plane the slot-adjuster is conveniently located and fastened with screws so arranged that the adjustor, which defines the width of the slot, can be moved towards or away from the disk at little trouble.



SHOWING SIZES OF STONES AND ROOTS THAT CAN BE TAKEN OUT BY THE CLAY CLEANSER

In this way the opening made by the face of the disk and the edge of the steel-plate, which forms the adjustor, can be decreased or increased according to the size of the impurities, which are permitted in the clay. The impurities of a size, which were prevented from passing through the slot with the rest of the clay, are retained and recollected on the adjustor, from whence they are pushed by the knife into the stone chutes.

The upper part of the bracket carries the rollers, which support the clay to be purified as it comes from the die of the auger-machine in the shape of a solid bar and slides towards the disk. These rollers are covered with felt to prevent the clay from adhering to them.

To the roller-bracket, are fastened on the two opposite sides the stone chutes by means of large hinges. They are made of wrought-iron and sheet-metal and so ar-

ranged that they close the slot, which is formed by the disk and the adjustor. They are fitted with adjustable iron plates, which can be set to within 1-64 of the disk, thus nothing but what can pass the slot can get into the purified clay. Towards the bar of clay the stone chutes are closed with iron doors, suspended from hinges and made of one or two parts, each having a weighted lever, by means of which they are kept closed. These chutes and doors are hand-made and able to withstand the abuse and handling by unskilled laborers, when they are cleaned and the dirt taken out once a day.

The slide bracket for the cross-head of the stone pusher also extends very far from the frame, where it is fastened by several strong bolts and dowel-pins. It is made of cast iron, accurately machined and scraped and is well protected by an ingeniously arranged sheet metal cover against the dirt and dust and the rough handling to which brick machinery is supposedly subjected.

Upon the slide bracket ride the slide block, adjusted and fitted with care, the parts, where both slide upon each other being mathematically machined and scraped with the utmost care, so as to keep low the inevitable loss by friction and are insured against lost motion by several set screws, they are amply proportioned with a view to long and satisfactory service and small wear. Oil cups are provided to keep continually a film of oil on the slides.

The slide block carries the knife adjuster, which is of triangular shape with a face of 2 inches in width towards the disk, on which the knife is securely held in place. Owing to the triangular shape of the adjuster its face is inclined towards the disk, by this means the knife can be placed in the slot so as to touch either slot adjustor or the disk.

The knife or stone pusher is made of soft steel or hoop iron, about one foot long and 1½ inchees wide, and of a thickness according to the slot, in which it has to move from 1-16 to 1-4 inch. It is made so that both ends can be used. As the worn-off knife has to be reversed after one or two days use, it is held in place by bolts which can be loosened conveniently and the exchange can be made in a few minutes during the emptying of the stone chutes.

The knife reaches from underneath, into the slot, and following the motion of the slide block, which is operated by the crank, goes continually to and fro before the face of the disk thereby keeping the slot open for passage of the pure clay, and pushing into the stone chutes everything that is harder or tougher than the pugged stiff, or soft mud clay, and that is too large to pass through the slot.

The rod, which connects the slide block with the crank wheel is made of cold rolled steel and extra heavy to meet the strain which is imposed upon it very often by the working of tough clays containing numerous stones. Both cross end and fork, are provided with oil holes.

To keep the face of the disk clean of clay, there is provided a scraper. It consists of a long lever, which swivels around a strong pin, securely fastened in a bracket, which is bolted to the frame. The lever is made of a piece of heavy flat bar, forged and bent to an angle such that the scraper can be applied to the disk without giving a chattering noise. It carries on one end a broad casting on which the adjustable scraper blade of soft steel is fastened and on the other end it is connected by a rod, spring and crank to the frame. The spring rests upon an eye bolt through which the rod is drawn, the eye bolt is screwed into the frame. The whole arrangement is made so that the pressure of the scraper blade against the disk is regulated by the tension of the spring, which can be increased or decreased by a few turns of the crank.

There is a substantial iron railing on the frame to prevent people falling into the open space between frame and pulleys or from being caught by the belt.

With every machine there should be ordered an automatic facing tool outfit to face the disk, if it is worn out unevenly by the flint or iron wedges, which happen to be in the clay sometimes. Theoretically the disk ought not to experience any grinding action on part of the bar of clay as this is merely spread upon the disk as for instance butter is spread upon bread. But as the clay can never be pugged so uniformly and actually worked upon to the smallest particle by the pugging knives, and because of stones the disk wears out and has to be trued, if a certain size of slot is to be maintained. By means of the facing outfit this can be done within half a day. It is only necessary to take the roller bracket away, disconnect the crank and the stone pusher and spread a cover over the slide bracket and fastened so to the frame, that the shavings cannot get into the purified clay or any part of the machine.

WISCONSIN CLAY MANUFACTURERS' ASSOCIATION PROGRAM.

The tenth annual convention of the Wisconsin Clay Manufacturers' Association will be held at Milwaukee, St. Charles Hotel, on February 23rd, 24th, and 25th. Among the special features of the convention will be the illustrated lectures and demonstrations with clays and clay products by Professor A. V. Bleininger, of the Clay Testing Laboratories of the U. S. Geol. Survey, and the organization of a mutual fire insurance company among the members of the association:

1. The Wisconsin market for brick and clay products.
2. The preparation of clays. (Illustrated.)
3. The burning of brick and tile. (Illustrated.)
4. The great importance of tile drainage in Wisconsin.
5. Railway rates and their influence on the clay industries of Wisconsin.
6. Some factors determining the manufacture of brick by the soft mud process.
7. The manufacture of brick and tile by the stiff mud process.
8. The need of mutual fire insurance among the brick manufacturers.
9. Publicity and the clay industries.
10. Benefits of the State Association.

WISCONSIN'S MODEL SAND-LIME BRICK FACTORY.

A model sand-lime brick factory has just been set in operation at Portage, Wis. This factory is producing a very high grade brick made of sand and lime, and was erected for the Columbia Silica Company, of Portage, Wis., by the International Sand-Lime Brick & Machinery Company, of 90 West Street, New York. The factory is located on a glass sand deposit, which has been owned and operated by the Columbia Silica Company for some time. The brick factory, added during this year, is designed on the same general plans and arrangement of machinery as those used in the factory of the Cranford Paving Brick Company, at Washington, D. C., which factory also was erected and equipped by the International Sand-Lime Brick & Machinery Company and has been greatly admired for its completeness and automatic simplicity. All the buildings are of steel construction, and temporary sheeting of lumber is being used to keep out the weather for the present, but later on the sheeting is to be replaced by solid walls of brick of own manufacture, thus making, when finished, an entirely fire-proof building. The brick are made by this factory under the patented "Division Method," as owned and installed by the International Sand-Lime Brick & Machinery Company. Brick and stone made by the same method are being used in large building operations in the city of Washington, Philadelphia, and New York. Among other prominent buildings, there has been erected and faced with this brick the new Philadelphia Opera House, built by Oscar Hammerstein. Quite a number of apartment houses in the city of New York, as well as a new theatre which is being built on East 13th street, between Fourth avenue and Irving Place, are using this brick.

The natural color of the brick depends upon the color of the sand. If the same is white, the color of the brick will be a pure white. The quality of the brick made by this process is of such a high grade, particularly regarding low absorption and great crushing strength, that the same have been adopted in most important building operations throughout this country, and among others, by the United States Government in the erection of the new barracks and other monumental buildings at West Point.

The factory at Portage, Wis., will market its product mainly at Milwaukee, Chicago, and other important large cities in the west. The cost of production under the "Division Method" is so low that it is possible for the manufacturer to ship the product great distances. The process itself is entirely automatic, and in a factory producing 20,000 brick per day of ten hours but eight men in all are employed, 60 tons of sand, 2½ tons of lime, and 3 tons of coal.

It is claimed that the brick, as well as the stone manufactured by this method have taken its place with the best building product. Judging from the rapid development of the business itself and the universal favor which the product has found in such cities as New York, it seems reasonable to say that this industry will experience a great advance during the next few years.

The Florida Sandstone Brick Co., Jacksonville, Fla., has been formed to take over the plant of the Florida White Pressed Brick Co's plant which was recently bought in at a forced sale. John D. Baker is president, J. D. Holmes vice-president and R. T. McEachern secretary, treasurer and general manager. The capital stock is $30,000 all paid in. The new company has purchased additional machinery and are building new buildings.

BRICK MANUFACTURERS' CLAIMS ARE UPHELD.

Washington, Dec. 8.—The Interstate Commerce Commission today handed down a decision in the brick cases, which were presented before it by the Metropolitan Paving Brick Co., Mack Manufacturing Co., Malvern Clay Co., Big Four Clay Co., the T. B. Townsend Brick & Contracting Co., C. P. Mayer Brick Co., the Ohio Face Brick Manufacturers' Association, the National Paving Brick Manufacturers' Association and the Stowe-Fuller Co. These cases involved the classification of fire, building and paving brick when transported from points in Central Freight Association territory to points in Trunk Line territory. The reasonableness of the existing rates on the three kinds of brick from and to the points named was also in question.

The order of the Commission follows:

It is ordered that said defendants be, and they are hereby, notified and required to cease and desist on or before the first day of February, 1910, and for a period of not less than two years thereafter abstain, from charging, demanding, collecting or receiving for the transportation of fire brick, building brick and paving brick in carloads, on shipments eastbound from Central Freight Association territory to Trunk Line territory the rates based upon the present Chicago-New York base rate, which rates have been found by this Commission to have been unreasonable.

It is further ordered that said defendants be, and they are hereby notified and required to establish and put in force on or before the first day of February, 1910, and maintain in force thereafter during a period of not less than two years, and apply to the transportation of fire brick, building brick and paving brick, in carloads, on shipment eastbound from Central Freight Association territory to Trunk Line territory rates based upon a Chicago-New York base rate not exceeding 21 cents per 100 pounds, which rates have been found by the Commission to be reasonable maximum rates to be applied.

And it is further ordered that said defendants be, and they are hereby authorized to make effective upon three days' notice to the public and to the Interstate Commerce Commission, given in the manner required by law, the rates which said defendants are, by this order, required to establish and put in force on or before the first day of February, 1910, in which event the tariffs in which such rates are given must contain the notation that they are issued under the authority hereby granted and must refer to the number of these cases.

THE AMERICAN PULVERIZER MAKING GOOD.

One of the managers of the Great Eastern Clay Co., one of the largest concerns of its kind in New Jersey, says "that the pulverizers at their works are giving perfect satisfaction and most excellent service in every way. That they have had considerable experience with crushers of various forms and would state there is no comparison between either form of crushed and the American Pulverizer, both as to quality and to capacity. We feel fully satisfied that the cost of maintenance will come well within the cost of maintaining a dry pan."

If you are in the market for a pulverizer write to the American Pulverizer Co., 410 Jaccard Bldg., St. Louis. Mo., and get prices and particulars.

The Champaign Brick Co., Mechanicsville, N. Y., has decided to reduce the number of directors from seven to five.

PACIFIC COAST NEWS ITEMS.

The market for common brick in San Francisco is in a very poor shape at the present time, there being some large stocks on hand and a lessened demand. This article is still being quoted at $7 per thousand, but few sales are being made at this price, practically every firm in the business selling for lower figures, some of them below the cost of production. Many of the plants closed early in the season and most of the others have closed lately owing to the heavy rains that have been falling during the past two weeks. The closing down of the plants for the winter will help out the situation some but the rains have also hindered building operations and the permits taken out and the contracts signed last month show a falling off as far as brick construction is concerned. It is predicted that in the spring there will be an unusual demand for brick to carry out the extensive building plans that are being made at the present time. In addition to there being a number of large structures planned to be erected by private parties there will be a great amount of municipal work as the new Administration has announced that the rebuilding of the municipal structures burned in the great fire of 1906 would be commenced at the earliest possible date. There is also a great amount of sewer work to be done and some large quantities of vitrified brick will be used. This material is used exclusively to line the cement sewers that are now being constructed. While the demand for brick here is rather light for immediate call some large quantities have been sent to towns in the interior part of the state where no brick plants are located and where builders have seen fit to make use of this material in building. There is no surplus in the line of fancy brick or terra cotta as the production of these are kept down to actual requirements.

The United Materials Co., which is selling agent for the Los Angeles Pressed Brick Co., is introducing into the San Francisco market a new product of the southern California firm that is of about the same appearance as the "tapestry" brick used so much in the east at the present time. This particular brick is known here as "ruffled" brick and is made from a clay mined near Los Angeles. The Richmond plant of this concern is turning out a product similar in appearance to the article made at the southern plant but the quality is not considered quite so good. This new brick will be used in the fine new building to be erected soon by the Olympic Club on the Post street site. John Hammersmith, who is assisting in the planning of the new building states that a special decoration is to be made in the shape of stamping the emblem of the athletic club a "Winged O" on every alternate face brick. Some very fine brick and tile work will be done in this building.

Edward A. Zeile, of Oakland, has brought suit against Frederick W. Beardslee, president and treasurer of the Vallejo Brick & Tile Co., to have Beardslee appointed trustee of a large block of stock which Zeile purchased in the brick company and to recover $4,000 damages. Zeile alleges that he gave Beardslee checks amounting to $5,000 with which to purchase stock in the brick company at $1 a share. He charges that Beardslee indorsed the checks and purchased a large amount of the stock at 20 cents a share, enabling him, it is alleged, to give Zeile 5000 shares and to retain several thousand shares for himself. This transaction Zeile avers was fraudulent and asks the court to declare Beardslee a trustee of the remainder of the stock.

The use of paving brick is slowly growing in this section of the state and much is expected to be used from now on. Some of the street car companies have commenced to use it to pave between their car tracks and the success met with by them will be closely watched by city officials.

A large addition is to be made soon to the plant of the Southwest Brick Co. at Inglewood, Cal., a large tract of land having been purchased for its extensive operations.

The brick plant of J. Clyne, of Benecia, Cal., which is located at Glen Cove, is to be opened next spring after having been closed for several seasons. Preparations are being made to add considerable new machinery.

The St. Anthony Mining & Manufacturing Co., which operates near Alta, Cal., has closed down its plant for the winter. The St. Anthony is controlled principally by Minnesota stockholders whose object is to first work the clay on its property to extract the gold and then use the clay for the manufacture of fire brick.

A. C. McKnight, a mining expert of Los Angeles, has been making a careful examination of the Los Paderas Mountains in the southern part of the state in search of feldspar deposits. The results of the search were declared to be satisfactory and some extensive filing of mineral claims have been carried on by men who propose to erect a pottery factory in Los Angeles.

The new brick plant of Dorris & Colvin at Alturas, Cal. has been completed and the plant has been busy turning out brick before the winter season put an end to operations.

The announcement is made that the new continuous kiln of the California Pressed Brick Co., at Niles, Cal., is completed and that it would be placed in operation immediately. This continuous kiln is said to be the largest in the state and when operated to its full capacity will more than double the output of the Niles plant. The opening of the new Western Pacific railroad will be of great benefit to this company as it will mean additional transportation facilities.

The Pure Clay Brick & Tile Co. which has an office in San Francisco and which recently took over the old Hilton plant near Santa Rosa has repaired the machinery and now has the plant in operation.

The Carquinez Brick Co. now has its large continuous kiln finished and in operation and is still operating to fill a number of important contracts that have been received lately. This concern is one of the few which has no surplus stock of common brick on hand.

At a recent election, territory more than double that formerly covered by Oakland was added to that city and a great deal of sewer work will be done in the new districts at once. Plans for the extension of the sewer system are now being drawn and work will be commenced early next year in extending and perfecting them.

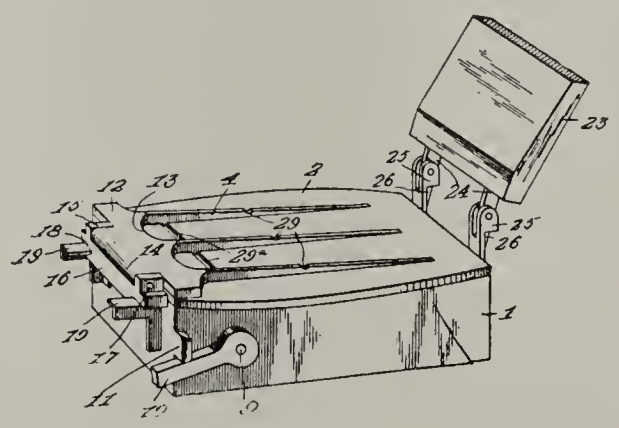
Workmen are busy repairing the plants of the Carnegie Brick Co. near Stockton, which were damaged recently by explosions in the boiler rooms. The damage was not as heavy as at first thought but is still quite serious.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER.

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

934,734. Mold for Roofing-Tiles. Harry H. Katz, Dubois, Ind. Filed March 5, 1909. Serial No. 481,259.

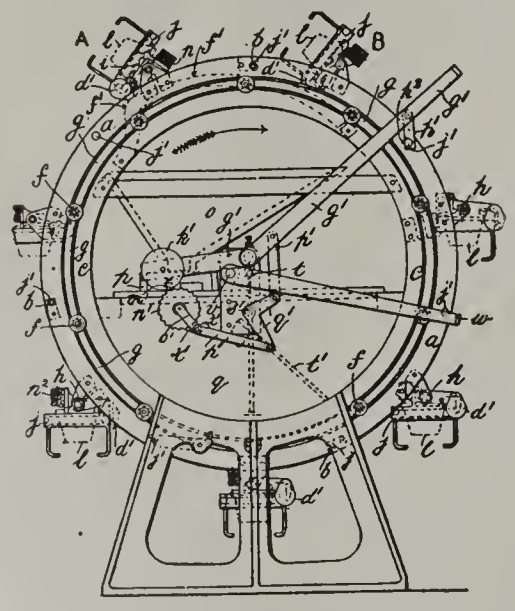
A molding machine of the character described comprising a body, a removable pallet thereon having slots, retractable side sections arranged in the body to project through the slots in the pallet, a retractable end section, a shaft, eccentrics upon the latter for projecting and retracting said side sections, a slide operatively connected to said shaft and carrying said end section for retracting and projecting the same, and a removable top section.



A molding machine of the character described, comprising a body having a bottom mold member provided with slots, retractable side sections arranged in the body to project through said slots, a retractable end section, a shaft, means operated by the shaft for actuating said side sections, a guide upon said body, a slide upon said guide, means connecting said end section to said slide, and an operative connection between the shaft and said slide.

934,231. Apparatus for Casting Hollow and Other Ware of China and Other Materials. William Stubbs, Stoke-upon-Trent, England. Filed March 11, 1909. Serial No. 482,799.

In a casting-machine, the combination, with a stationary support, of a revoluble frame journaled in the said support, mold-carriers pivoted at the periphery of the said

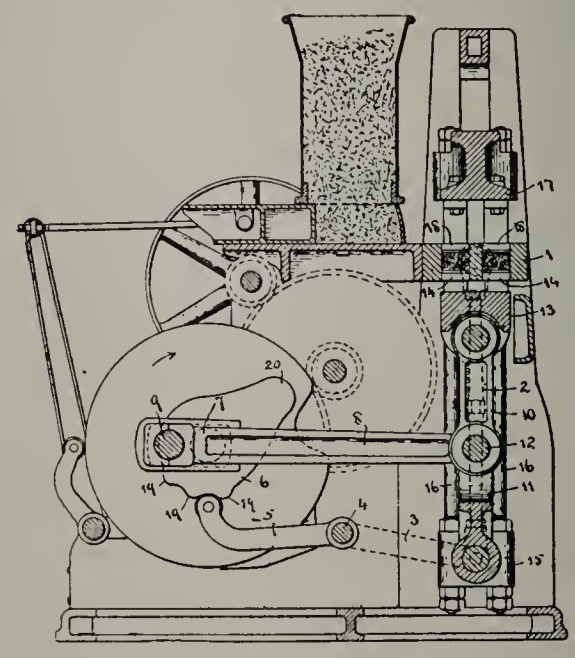


frame, and a trough for holding slip arranged inside the said frame and provided with valves for filling the molds at the lower part of the frame, said trough being arranged to receive the surplus slip from the molds when the said mold-carriers are tilted over at the upper part of the frame.

In a casting-machine, the combination, with a stationary support, of a revoluble frame journaled in the said support, mold-carriers pivoted at the periphery of the said frame, a trough for holding slip arranged inside the said frame and provided with discharge-valves for filling the molds at the lower part of the frame, and trip-mechanism for tilting the mold-carriers automatically at the upper part of the frame to permit the surplus slip to run from the molds into the said trough.

934,395. Process of Making Articles of Plastic Materials. Orvis G. Diefendorf, Binghamton, N. Y., assignor to International Brick Machine Co., Binghamton, N. Y. Filed Sept. 10, 1908. Serial No. 452,471.

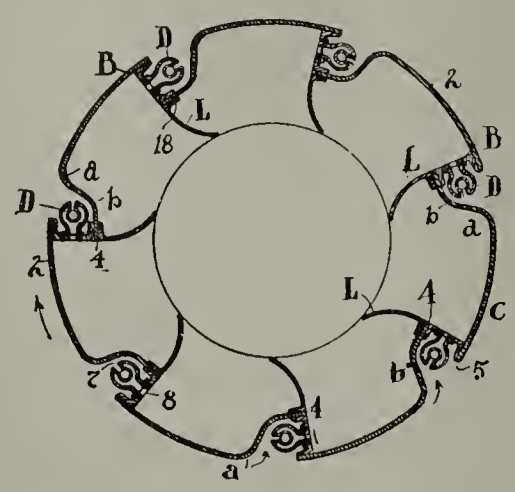
The process comprising the forming of plastic material into the desired shape in a suitable mold and subjecting one or more surfaces thereof to a reciprocating finishing action while in the mold, whereby the particles of material will be acted upon to fill all interstices in such surfaces and thereby render said surfaces smooth and uniform.



The process comprising the forming of a moistened mixture of cement and other materials into the desired shape in a suitable mold, subjecting one or more surfaces thereof to a reciprocating finishing action while under pressure in the mold, then permitting a crust to form thereon, and thereafter wetting the molded form sufficiently to cause the cement in the interior to properly set.

934,712. Mechanical Drier. William M. Cummer, Cleveland, Ohio. Filed April 6, 1908. Serial No. 425,475.

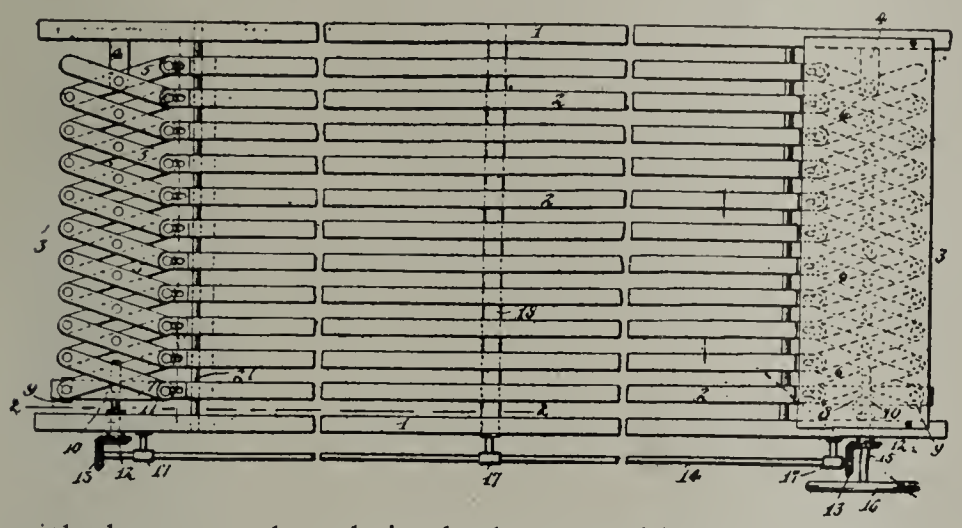
A cylinder having draft openings through its sides, and guards over the said openings consisting each of two portions inclosed one within the other and having a draft space between them.



A cylinder having a series of draft openings entering the same, combined with two part guards over said openings, one of said parts constituting a shield for the other, and the shielded part constructed with a double discharge.

935,516. Screen. Charles J. Jewett, Fort Smith, Ark. Filed July 21, 1908. Serial No. 444,667.

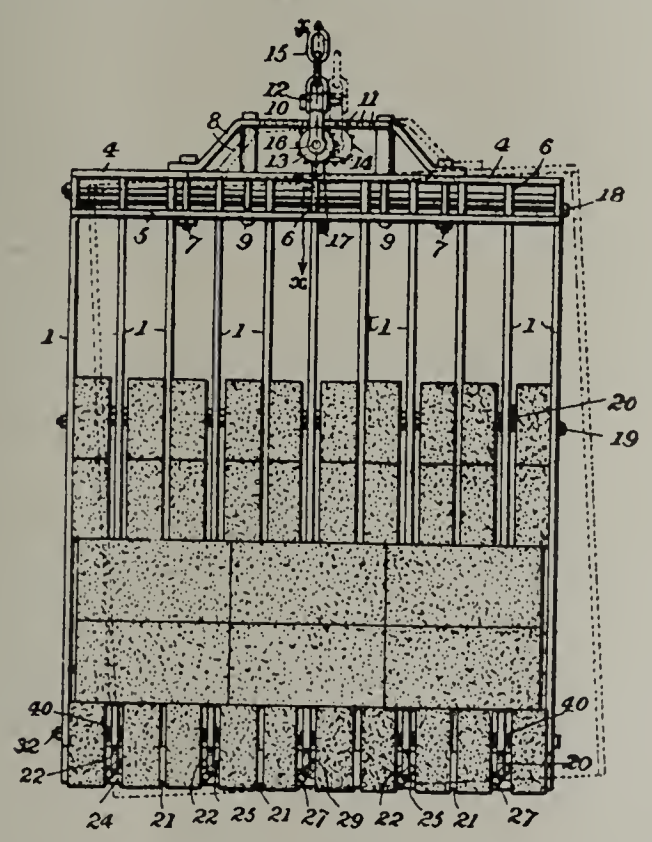
In a screen, side bars, a plurality of screen bars disposed between the side bars, lazy tongs disposed at either end of the screen bars, one end of each of the lazy tongs being secured to a side bar, the screen bars being attached at either end to levers of the lazy tongs respectively, screws journaled to a second side bar, levers connected to each of the lazy tongs at one of their ends respectively, having threaded orifices, the screws meshing



with the screw threads in the levers, said levers each having sliding engagement with the adjoining levers of the lazy tongs at their other sides respectively, and means to operate the said screws simultaneously.

13,022. Brick-Handling Machine. William H. Francis, Cherryvale, Kans., assignor of one-half to Charles Francis, Independence, Kans. Filed June 4, 1909. Serial No. 500,228. Original No. 859,445, dated July 9, 1907, Serial No. 347,360.

A machine of the character described, comprising lifting mechanism for engaging and lifting a pile of superimposed bricks as a body intact and undisturbed as an orderly pile, without individual handling, said pile consisting of a series of bricks in width and a series of bricks in



height, said mechanism containing suspending means for carrying the lower bricks of the pile in suspension as distinguished from supported underneath, and including means for applying the pile-carrying strain to the bricks below the top as distinguished from at the top.

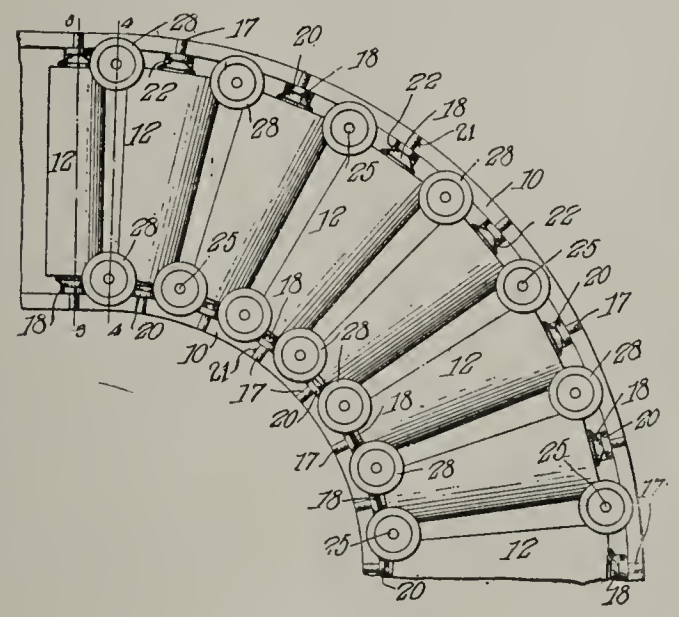
A machine of the character described, comprising a vertically disposed frame, laterally extending arms carried thereby, each alternate arm having its lower edge cut away, a link carried by the outer end of the cut away arm, gripping jaws pivotally connected to the lower ends of said links, pivots carried by the inner ends of said gripping jaws and passing through horizontal elongated slots, arms rigidly secured to said pivots and having bifurcated upper ends, a horizontally arranged rod passing through said bifurcated arms, stops carried by said rod, coil springs on the rods between the stops and the bifurcated ends of the arms, and a pivoted operating lever connected to said rod whereby the gripping jaws are simultaneously moved and given the same gripping pressure.

937,822. Vitrified Paving-Brick. Karl Langenbeck, Boston, Mass. Filed Dec. 16, 1908. Serial No. 467,868.

As a new article of manufacture, a paving brick or block consisting essentially of sieved coal ashes, possessing the capability of felting and constituting the refractory portion of the ash, and a bond of clay which is more fusible than the ash, the proportion of the bond being insufficient to prevent felting of the ashes, said brick being practically non-absorptive and having a vitreous fracture.

935,669. Gravity-Conveyor. Lewis D. Logan, Cherryvale, Kans. Filed April 29, 1908. Serial No. 429,995.

In a gravity conveyor, a frame, a series of horizontally disposed rollers supported on said frame, a series of slotted cross bars connecting the side of said frame, a pair of vertically disposed spindles between each pair of rollers, vertical rollers on said spindles, means to connect said spindles to said cross bars and passing through said slots, and elements to secure said means in adjusted relation to said cross bars.



In a gravity conveyor, a frame, a series of horizontally disposed rollers supported on said frame, a series of slotted cross bars connecting the sides of said frame, a pair of vertically disposed spindles between each pair of rollers, vertical rollers and said spindles, longitudinal bars resting on said cross bars and supporting siad spindles, threaded studs projecting from said longitudinal bars through said slots, and nuts on the projecting ends of said studs to hold the longitudinal bar in adjusted relation to the cross bars.

The Longmont (Colo.) Brick & Tile Co., are building a brick shed for winter drying of brick and tile.

The Claude Brown Co., has filed a certificate changing its name to the Hendersonville (N. C.) Brick Co.

Fred H. Thies has decided to retire from the dairy business at Markham, Ill., and expects to manufacture brick near Jacksonville.

The Corry (Pa.) Brick & Tile Co. have installed a Dunn wire cut lug machine in their plant. Frank B. Dunn, of Conneaut, Ohio, is the patentee.

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"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

CONVENTIONS

The fifth annual convention of the National Paving Brick Manufacturers Association, will be held at Pittsburg, Pa., Feb. 7th, 1910. Secretary W. P. Blair, Indianapolis, Ind.

The twenty-ninth annual convention of the Iowa Brick and Tile Association will be held at Des Moines, Ia., January 12, 13 and 14, 1910. Secretary C. B. Platt. Van Meter, Ia.

The twenty-fourth annual convention of the National Brick Manufacturers Association will be held at Pittsburgh, Pa., February 6 to 12, 1910. Headquarters at Hotel Fort Pitt. Secretary T. A. Randall, Indianapolis, Ind

The twelfth annual convention of the American Ceramic Society will be held at Pittsburgh, Pa , February 6, 7 and 8, 1910. Secretary, Edward Orton, Jr . Columbus, Ohio.

The thirty second annual convention of the Illinois Clay Manufacturers Association will be held an Champaign, Ill., January 18, 19 and 20, 1910 Headquarters Hotel Beardsley. Secretary George H. Hartwell, Chicago, Ill.

The National Clay Machinery Association will hold its seventeenth annual meeting in the Fort Pitt Hotel Pittsburg, Pa., Feb. 8th, 1910. Secretary W. N. Durbin, Anderson, Ind.

The Clay Products Association, of America, will hold its 2nd annual meeting at Pittsburg, Pa., Feb. 8th. Headquarters at Hotel Fort Pitt. Secretary J. Parker B Fiske, Flatiron Bldg., New York.

The tenth annual convention of the Wisconsin Clay Manufacturers Association will be held at Milwaukee, Wis., February 23-24-25, 1910. Headquarters St. Charles Hotel. Secretary, Samuel Weidman, Madison, Wis.

It's better to know more than you tell than to tell more than you know.

"Don't brood over the past or dream of the future; but seize the instant and get your lesson from the hour."

Many a man compels himself to believe that he is having a good time when he is spending more money than he can afford.

Occasionally we meet people who spend half of their time telling what they are going to do and the other half explaining why they didn't do it.

Did you send in that subscription money? We can take it any time, either for old or new subscribers, even if we were obliged to work a little late to accommodate you.

Read the announcements of the several conventions that are to be held within the next eight or ten weeks, and try to attend to as many of them as possible. You will find that most of the progressive clay manufacturers are at these meetings. They are there to gain knowledge and incidentally give knowledge to others. Arrange now to attend one or more of these meetings.

TILE COMPANY HIT HARD FOR ACCIDENT DAMAGES.

The damage case of Mrs. Neal against the Sheffield Brick & Tile Co. was tried in the district court at Hampton and resulted in a verdict for Mrs. Neal of $5,500. It will be remembered that the damage asked was $12,500. The first of the week the damage case of Mrs. M. H. Gillott against the same company was brought to trial and after a hard fight on both sides the case was given to the jury and they brought in a verdict for $4,000 damages. The amount asked by the plaintiff was $15,000. It is believed that both of these cases will be appealed to the supreme court. The Sheffield Brick & Tile Co. are protected by a Liability Insurance Co. and will not be losers in the deals.

MUST PAY FOR STOCK.

A decision was also handed down in the case of E. T. Collins vs. the Southern Brick Company, of Little Rock, Ark., affirming a judgment of the Pulaski Circuit Court to the effect that Collins must pay for a stock subscription of $2,000 made to the brick company in question.

Collins claimed that when he subscribed for the stock R. C. Butler and C. L. Wayman, who took his subscription, promised he should be made manager of the company, but that this was not carried out. Hence, he declined to pay for the stock.

The Supreme Court held that the testimony showed that, at most, only a promise was extended to Collins by these two men, without the knowledge or acquiescence of the other stockholders, and that their action did not constitute fraud or justify refusal to pay for the stock.

OBITUARY.

One of the oldest residents of Gloucester, N. Y., Andrew J. Beebe, eighty-six years of age, died at his home in German street, caused by a stroke of paralysis. He was a long life resident of Gloucester and with the Thackara Brick Co. for over thirty years.

Henry H. Remmey, a member of the firm of R. C. Remmey & Co., prominent manufacturers of fine brick on East Cumberland street, Philadelphia, Pa., died at his home, 4732 Oakland St., after a long period of illness. He was a mason, 68 years of age and a veteran of the civil war.

Robert J. M. Ward, aged 45 years, dropped dead as he was alighting from his carriage at his home near Freeport, Pa. He was a member of the firm of John H. Ward & Sons Co., brick manufacturers of Wilkinsburg, and until a month ago lived there. Heart trouble was the cause of his death.

OUTPUT OF CONNECTICUT PLANTS ABOUT 120,000,000—PRICES SATISFACTORY.

New Britain, Conn., Dec. 1.—The brick-manufacturing season in central Connecticut has lasted later than usual this year on account of the demand for the products, but plants which are not equipped with artificial drying machines have had to close because of the cold weather. It is estimated that the total output for the season in the New Britain, Berlin and Middletown district is approximately 120,000,000. The Central Connecticut Brick Company of New Britain, which has charge of the sales for eleven subsidiary concerns, will alone handle 100,000,000 brick during the season. The manufacturers have consumed about 20,000 cords of wood during the season.

The price of brick, ranging from $5 to $6.75 per thousand, has been satisfactory to makers. Of the total production for the season not less than 75 per cent has already been shipped from the yards, and it is estimated that 10 per cent of the remainder has been sold. The demand this season is in marked contrast with the dulness of the market during the past two years.

BRICK INDUSTRY CAPACITY TAXED.

The manufacturers of fire brick in the Pittsburg section are working overtime, forcing their furnaces to the limit to keep even with the many orders coming in for bricks for work about the furnaces. Many thousands of fire bricks are used yearly for furnace linings, and with the great volume of business going to the iron and steel manufacturers the brick makers are kept busy.

One of the makers of fire brick in this section is said to be over 6,000,000 bricks behind in his orders, and to be making plans to increase the capacity of the plant. Many others are rushing work to be ready with a large supply of bricks when spring orders come in.

All the brick makers are looking forward to a boom in the building industry in the spring.

Centralia, Wash., capitalists, are considering plans for developing an extensive bed of clay two miles east of town, making paving brick, etc.

ACCIDENTS, DAMAGES AND LOSSES.

Frank Biggers received a fracture of the skull and inflicted other injuries by being struck by the cage of a mine of the Mexico Brick & Fire Clay Co.'s mine at Mexico, Mo., so that he died four hours later.

Adrian Hart, a ten year old boy, met with a terrible accident at the plant of the Mason City (Ia.) Brick & Tile Co. by his clothes being entangled in a revolving shaft and whirled around so as to crush his foot and break his left arm.

D. P. Thomas has been appointed receiver of the H. Scott (Kansas) Brick Co. by the Federal Court. He will operate the plant under the receivership.

Several sheds and buildings of the Standard Brick Manufacturing Co. at Evansville, Ind., were wrecked by a storm which passed over that section of the country.

Thomas Cunningham, foreman of the Lehigh (Ia.) Clay Mnfg. plant, while going to work fell and broke the right leg. He was found by other workmen and taken to his home.

The Sheffield (Ia.) Brick & Tile Co. was hard hit by two judgments being granted against the company for damages in the last term of court. One to Mrs. Neal for $5,500 and the other to Mrs. Gillatt for $4,000. The company is insured against employees accidents.

E. I. Frost has been appointed receiver for the Carolina Clay Co. of Ashville, N. C., by the U. S. District Judge. Mr. Frost is the president and secretary of the company. The plant is in the extreme northwest of the state.

John Latham was crushed to death in the Clay pit of the Don Valley Brick Works near Toronto, Ontario, while working in the pit.

Anton Wendelborn, night watchman for the Fond du Lac (Wis.) Pressed Brick Co. was run over by a train by being caught on a bridge which he was crossing to make a short cut to home.

STEEL MAGNATE REPORTED TO BE LOOKING OVER SPA SPRING CLAY PLANT.

That the old Staten Island Terra Cotta Lumber Co.'s works, otherwise known as the Anderson & Lyle plant at Spa Springs, N. J., is to go into the hands of Charles M. Schwab, the steel magnate, is the report among real estate investors in Perth Amboy and Woodbridge. It has been unofficially stated that Mr. Schwab has sent representatives to view the tract and that he has decided to purchase it to advance his steel interests.

The property is at present in the hands of the Powers Realty & Construction Co., a concern formed by Philadelphia capitalists. The land is partly bordered by the Pennsylvania railroad and by Woodbridge creek and the Central tracks run through it.

Rumors current about Woodbridge are that a big steel plant is to be constructed upon the site. Efforts to locate any members of the present owners of the land this morning proved futile.

Clay taken from the gold mine at Alta, Placer Co., Cal., is to be used for the manufacture of fire brick.

GAS SHORTAGE IS RESPONSIBLE FOR HIGH-PRICE BRICK.

Because of the limited supply of gas manufacturers of building brick whose kilns are located in the Kansas district of the gas belt, may be forced to use oil instead of gas in the burning of brick. The supply of gas in this district began to decrease about eight months ago and since that time the price of common building brick has steadily gone higher.

Common building brick is now selling in Kansas City from $4.50 to $5.00 per thousand, while gas is plentiful it sells from $3.00 to $3.25 per thousand, on board cars at the kiln. At this time of the year there is ordinarily a great supply of common brick available on the market, but all plants declare that they have now all the orders booked which they can handle.

There are twenty-eight plants located in the southeastern corner of Kansas from which the Kansas City market derives the majority of its cheap building brick.

Because the supply of gas decreased only eighteen of these plants are now in operation. The majority are forced to burn oil instead of gas. Brick men and building contractors says that there is no remedy for the situation unless relief comes from the Oklahoma district, where there is a plentiful supply of gas.

There are other brick plants which use coal in the burning of the brick, but they can not ship brick or compete with the brick plants burning gas, which furnish the common building brick on the Kansas City market. There has been more or less trouble at the plants for the last eight months, but the problem reached its more serious stage about two months ago, when several of the wells went completely out.

The price of brick advanced $1.50 per thousand last winter over last year's quotations. In the spring when the gas was more plentiful it dropped about 10 cents on the thousand. Under the present gas troubles the price has already advanced 50 cents a thousand over the summer prices.

"I believe the prices for brick will advance from 50 to 75 cents a thousand more before the winter is over and I can see no remedy for the situation unless relief can be obtained from the Oklahoma district," said George Stephens, manager of the Bryant Supply Co. "It costs twice as much to produce brick with oil as it does with gas, and at the present time most of the plants are forced to burn oil. The prices for the higher grades of brick, such as pressed and vitrified brick will not be affected very much for most of those grades are produced by coal burning plants."

LARGE ORDERS FOR BRICK FROM LOCAL CONCERN.

The Independent Brick Selling Co., of Trenton, N. J., with works near White Horse, have received several large orders during the past week. They have been awarded the contract for nine miles of sewer brick at Bordentown, and have orders for brick for twenty-five houses at Cape May, N. J., which are being erected by William G. Flynn, a wealthy contractor of Pittsburg, Pa.; for fourteen houses at Atlantic City for Samuel H. Headley and for the Crossley Manufacturing Co.'s garage being built off South Clinton avenue in the rear of Barlow's hotel. Notwithstanding this large demand for brick the company have close on to two million on hand at their factory.

Chicago capitalists are considering the purchase of the Carbon (Ind.) Clay Works, and repair and place the plant in operation.

JURY DIRECTED TO BRING IN VERDICT IN FAVOR OF THE DEFENDANT IN AN ACCIDENT CASE.

After arguments on the motion, in the case of Hiram B. Gray vs. The United Brick Company, Conneaut, Ohio, to order a verdict for the defendant, were finished, Judge Roberts sustained it and ordered a verdict for the defendant.

The court made a review of the circumstances of the case in which dynolite or some other substance contained in an iron tube the plaintiff was using about a fire, exploded and he was injured. The point made by this defense was that the company had no knowledge of the presence of the explosive in the tube and therefore was in no way responsible for the accident. At the close the motion was sustained and the jury was called in and directed to return a verdict for the company.

Many witnesses were examined, among whom was the plaintiff. His story was in harmony with the claims made in his petition, that while at work with an iron tube for the defendant company, dynolite, a dangerous explosive which had been placed in the tube let go and he was seriously injured. This was on April 3, 1908, and the witness explained what the result of the explosion had been and such other details as were deemed necessary to his side of the case.

He was vigorously cross-examined by Mr. Cox, and City Clerk Chilson was called to identify the ordinance record of Conneaut city. Then the plaintiff rested.

The jurors were excused while Mr. Cox argued a motion to take the case from the jury and order a verdict for the defendant company on the ground that no negligence had been shown by the defense. He called attention to several claims in the plaintiff's petition which he said had not been proved in evidence. Considerable time was spent and authorities read in the argument.

PRODUCES GAS FIRED FURNACES.

The above name is the title of a book which has just been given to the public. It is full of good information such as the clay manufacturer wants. The book has 200 pages, 237 illustrations and is published by the author. Oskar Negel, Ph. D., a consulting chemical engineer.

The use of producer gas as an industrial fuel increases constantly and represents a progress in economy and hygienics. One ton of coal will do more work after its transformation into gas—as compared to direct firing—the hygienic advantage involved therein being the smokeless combustion of the gas. Furthermore, high grade coal can be replaced by low grade fuels, if the solid combustibles are gasified before being burned.

The suitable construction of the industrial furnace is of the greatest importance for the satisfactory application of producer gas. To give detailed descriptions and practical illustrations of nearly all kinds of gas-fired furnaces is the main object of this book, which is the first American work on this subject. Actual installations of the furnaces used in the chemical, metal, metallurgical, iron, steel, lime, cement, glass, brick and ceramic industries are described and illustrated. The combustion of producer gas and the construction of producers are also treated with sufficient detail.

The Clay Record will supply any of its readers with this book at the regular price, $2.00 net.

The ownership of the Dunn Brick Works, Erie, Pa., has changed hands, but the business will be continued by the same management and on the same lines. J. A. Liebel for 30 years the superintendent and Will H. Miller for five years the clerk, is secretary and business manager.

SAYLORSBURG BRICK PLANT REACHES NEW DAWN OF PROSPERITY.

The Blue Ridge Brick Enamel Company, whose finely equipped plant is located at Saylorsburg, Pa., has reached a new dawn of prosperity; its output is to be greatly enlarged as well as the diversity of the product. Important changes have taken place and the capital has been increased. New men have associated themselves with the company and this industry, which has already brought much prominence and fame to the county, will prove even more of an industrial factor than ever before.

In the past the company confined itself to the manufacture of enamel brick of a superior quality, but in the future will increase its output beyond anything ever dreamed of. It is the purpose of the company to make a fine building front brick of superb finish in buff, grey and other colors as desired, floor tiling and encaustic tile. In order to do this all the high grade machinery at the big plant is being overhauled and placed in a condition to meet the demand placed upon it.

The broadening out of the scope and importance of the well known plant is due to the fact that Charles Pryce has discovered on the plant's property large deposits of clay of the same consistency of that formerly brought in from New Jersey and western Pennsylvania at considerable cost. The fact that the clay is to be had right at the plant means a considerable curtailment in the cost of production and places the company in a much better position to meet the competition to which all manufacturing concerns are subjected. Mr. Pryce, who will have charge of the technical end of the business, is an Englishman by birth, and, besides being a practical brick man, having been connected with some of the largest enameled brick plants in England, is a chemist, and geologist.

The general superintendent, who is now in charge of the mechanical end of the business, is George Prentice, whose experience in the manufacture of brick well fits him for the important responsibilities placed on him.

Another important acquisition to the company is Maximilian Kahn, who is interested in large manufacturing plants in and around New York city, Canada and the west. Mr. Kahn is not a total stranger to the brick business inasmuch as his own people are largely engaged in this line in England. Mr. Kahn adds much strength to the company. It was the infusion of this new blood that has had so much to do with the broadening out of the plant.

Nor does the company propose to do the things mentioned, but contracts of much importance have already been received. A large quantity of the enamel brick, which has made the company famous, has been ordered by the Prudential Insurance Company, of Newark, and the output of this plant have been specified by the United States government to be used in a number of government contracts.

GRIFFIN BRICK CO. GETS REDUCED RATES INTO ATLANTA.

The railroad commission decided in favor of the Griffin (Ga.), Press Brick Co. in both its contentions against the Central railroad.

The first was to reduce the freight rate from Chestlehurst into Atlanta from 2½ cents to 2 cents. Attorney W. H. Beck showed that Macon, twice as far away, got a rate of 2½ cents, while Calhoun, 79 miles away in the other direction, was only charged two cents. With this rate given it, the Griffin company will get much business in Atlanta, where its quality of brick had been favored in many instances heretofore but freight had prevented sales.

The other point gained was in getting a minimum rate of 40,000 pounds instead of the full capacity of the large cars that the railroad frequently sent them and charged for whether filled or not.

BOSTON MANUFACTURERS FILE BILL AGAINST SOUTHERN CLAY AND THE LASSLYS.

Alleged unfair trade competition, and alleged infringement of copyright on a trade catalogue are the charges in a suit brought yesterday in the United States circuit court against the Southern Clay Manufacturing Co. and W. M. Lassly and T. H. Lassly by the firm of Fiske & Co., (Inc.), and J. Parker B. Fiske, of Boston and New York. The papers in the suit were filed in the above court late yesterday afternoon. The plaintiffs in the case are represented by L. A. Janney and Emery & Booth, of Boston, and Watkins & Thompson, of Chattanooga.

A temporary restraining order was granted by the court enjoining the defendants from further distribution of the alleged infringing catalogues or phamphlets, also an order authorizing the seizure of any of the same catalogues that may be found in any of the offices of the defendants. A hearing on the motion for preliminary injunction is set for Saturday next, Dec. 4, at 9 a. m.

In the bill it is indicated that the firm of Fiske & Co. are one of the oldest and best known manufacturers of brick and brick work in the country, claiming to have been established in 1864. To state fully the charges in the bill, the Boston firm claims to issue one of the finest and most complete trade catalogues in the whole country, bearing fine engravings and other things intended to set forth the business of Fiske & Co. in the most attractive manner possible. All of this is protected by the United States copyright laws. The papers, which have been filed in the suit, allege that the Southern Clay Manufacturing Co. have issued catalogues or pamphlets bearing exact photographic reproductions of the engravings in the catalogue of Fiske & Co., in direct violation of the copyright laws. As stated above the plaintiff's charge that this is unfair trade competition, and they ask that the Chattanooga firm be restrained from sending out any more of the alleged infringing printed matter.

As a result of the suit filed yesterday in the United States circuit court against the Southern Clay Manufacturing Co., of this city, by Fiske & Co. (Inc.), of New York and Boston, charging alleged infringement of copyright, all the catalogues, in which the alleged infringement took place, were taken from the offices of the defendant Co. Saturday night by a deputy United States marshal, acting on an order of seizure granted the plaintiffs by the court. Eleven packages of the catalogues were taken charge of by the officer, containing about ten thousand books. They will be held in the custody of the marshal's office to be used as evidence in the hearing of the preliminary injunction which is set for Dec. 4.—Chattanooga Times, Nov. 28-30, 1909.

KENILWORTH BRICK HAS 10,000,000 ORDER.

The Kenilworth Brick company, East Liverpool, O., is enjoying one of the most prosperous periods since the recent financial stringency. The company now has orders on hand for more than 10,000,000 brick, and the plant will be rushed to its full capacity for the next year. The indications for a steady run are exceedingly bright.

The orders have been coming in with much regularity at the Kenilworth concern. The entire number of employes at the plant are now working full time and will continue to do so for the next year.

The company is just completing a contract to furnish 3,000,000 bricks for the construction of the new independent sheet and tin plate plant being constructed by the Phillips Sheet & Tin Plate company at Weir City, the new mill town near Holiday's Cove. These brick will be delivered within the next two weeks.

BRICK MEN ELECT OFFICERS AND BANQUET.

Nine manufacturers of brick, representing the most powerful interests of the industry in Hackensack, and comprising the membership of the Brick Manufacturers' Association of Hackensack held the first annual dinner of the newly formed organization at Abbenseth's Hotel the night of Dec. 4th, at Hackensack, N. J. Besides the members there were present six guests, some of them not brickmakers but all interested.

Before the starting of the banquet, at 8 o'clock, there was a short business session at which officers for the ensuing year were elected. At least it was supposed to be an election, but as everyone was well satisfied with the men who have been holding down those jobs, they were simply named over again. They are President Elmore N. Mehrhof and Secretary Treasurer William H. Travianus. William B. Mackay, Jr., is counsel for the organization, the purpose of which is to inject some system into the local brick business and to obviate some of the objectionable features of miscellaneous competition.

After the meeting those present sat down and proved themselves excellent trenchermen. There were several speeches made during the evening and the purposes of the organization were thoroughly outlined. Counsel Mackay, Jr., was the first talker, and he had a lot of interesting things to say in regard to the association and what it has accomplished. He was followed by H. M. Post of Paterson and by Van Vorst Wells, secretary of the County Tax Board, Nicholas Mehrhof, who is 80 years old and the veteran of the local brick manufacturers, also delivered an interesting talk. He told of his experience in the business and of his hopes for the association, of which he is one of the leading members. During the dinner it was stated that the mine members of the organization have manufactured 100,000,000 brick during the past season at their yards on the Hackensack River. Some other statistics, which go to show that the business is in a highly prosperous condition, were offered.

Those who comprise the association and had representatives present last night are the Mehrhof Brick Company, the Hackensack Brick Company, Travianus and Gardner, Nicholas Mehrhof & Company, Edwin Schmults, I. E. Gardner, Philip Mehrhof, James W. Gillis and M. B. and L. B. Gardner. The invited guests were T. M. Brewster, Van Vorst Wells, Warren D. Mehrhof, H. M. Post and C. E. Walsh. Music and entertainment was furnished by Frank Shafer's one-man orchestra.

BRICK PLANT STARTS AND DECLARES 10 PER CENT DIVIDEND IN SIX MONTHS.

To place a brick plant in operation and declare a dividend of 10 per cent in six months operation would be an impossible feat anywhere except Caney, Kansas, but that is what the American Brick company accomplished in a brief existence of one-half year. A dividend of 10 per cent was declared at a meeting of the stockholders, and paid Nov. 30. It is an excellent showing and proves what can be done with the brick shale of Caney. With three plants in operation, one declaring a 10 per cent dividend in six months and another chartered to build immediately, Caney is fast asserting its rightful place as the best place in the country to manufacture brick.—Chronicle.

The Falls Brick & Tile Co., Sheboygan Falls, Wis., have built a downdraft kiln so that they can burn drain tile. They expect to next make the plant so that they can operate in the entire year. Wachter Bros. own the plant.

NEW JERSEY TAKING QUANTITIES OF BRICK.

Reports from Washburn Bros., Sayre & Fisher Co., Cook & Genung and other big distributors this side of the Hudson River show that New Jersey is taking exceptionally large quantities of common brick for this time of the year, and this in spite of the fact that the number of permits issued in some of the leading Jersey cities have fallen off within the last few weeks. Discussing this matter at the Builder's Exchange this week, one gentleman said that it was undoubtedly due to contractors hastening work in the suburbs and to the general practice of dealers to stack in anticipation of much higher prices early next year. Builders in New Jersey were fixing to be prepared to take new business on sizeable contracts during the winter, should it be an open one. This condition held true in nearly all classes of building material, stone being one of the exceptions.

Raritan River hard brick is still in demand in New Jersey. Brooklyn also is taking a large quantity. Big shipments are going into small Jersey towns, for instance, New Brunswick, Elizabeth and Perth Amboy, where big operations are in progress. They are holding firm at $5.75 to $6.

TILE WORKS SENDS EMPLOYES HOME.

Several hundred employees of the C. Pardee Works, in Perth Amboy, N. J., were sent home the 6th inst., and the tile department of the concern was closed, and the steel rolling mill operated by the Pardee concern, started after being closed for nearly two years.

It is believed that the concern will no longer manufacture wall tile. During the past year the salesman, superintendent and chemist of the company have resigned and have erected two similar industries in the city, one of which is the largest in this section of the country.

The output of the local plants exceeds the demand in the Eastern market and it is believed that the Pardee concern will abandon the manufacture of tile and manufacture only steel.

ANNUAL REPORT SHOWS SURPLUS AFTER DIVIDENDS OF $682,027.

The annual report of the Harbison-Walker Refractories Co., Pittsburg, Pa., for the twelve months ended September 30 last, shows net profits of $1,526,878, an increase of $378,472. Surplus after dividends is placed at $682,027, equal to 3.78 per cent earned on $18,000,000 common stock, as compared with 1.73 per cent in the previous year. Here is the condensed income account of the company, with comparisons:

	1909.	1908.
Net profits	$1,526,878	$1,148,406
Sundry deductions	150,285	133,038
Balance	$1,376,593	$1,015,368
Interest	119,187	127,938
Surplus	$1,257,406	$ 887,430
Preferred dividend	575,370	575,614
Surplus	*$ 682,027	$ 311,816
Previous surplus	3,169,961	2,858,146
Total surplus	$3,851,988	$3,169,961

The McKeesport (Pa.) Brick Co., has filed a complaint with the State Railroad Commission about rates charged by the railroads in that vicinity.

POTTERY NEWS ITEMS.

J. J. White has been appointed receiver for the Spokane (Wash.), Pottery Co., at the request of Daniel Shults. The assets are $41,796 and liabilities $21,276.

After an idleness of one year the New Cumberland (W. Va.) Porcelain Works will be opened and electrical supplies will be made. T. R. Swaney is in charge.

William Greene of Sebring, O., has left for Georgia in the interest of the Patterson Foundry & Machine Co., of East Liverpool, O. A clay plant will be erected.

The United States Potteries Co., Jersey City, N. J., has been incorporated with $100,000 capital stock. Incorporators are John L. Wells, William M. Parke and Charles T. Lark. The company is to manufacture pottery ware.

The proposed pottery to employ 200 hands at Glengarry, Wexford Co., Mich., is said now to be a certainty. The company has an option on the W. L. Sturtevant farm. The buildings are to be 135x450 feet in dimensions, and machinery operated by electric power.

THE KING ENGINEERING REMODELING MANY DRYERS.

The Cliffwood Brick Co. of Cliffwood, N. J., after having all kinds of trouble in drying their brick heard of successful dryers at Richmond, Va., and Washington, D. C., which were reconstructed by Edwin A. King, the consulting engineer of the King Engineering Co., of Richmond, Va., and decided to send their superintendent to both of these places to investigate dryers. He visited the plant of W. Benj. Davis, which is also drying soft mud brick and was so pleased with the results that the King Engineering Co. was given the contract to remodel the "Crown Dryers" which had been used on the Cliffwood plant for three years. Mr. King is now at Keyport, N. J., and will soon have the dryer ready to operate.

ILLINOIS BRICK COMPANY PUT ON REGULAR ROSTER.

The listing committee of the Chicago Stock Exchange has placed the stock of the Illinois Brick Company on the regular roster. The organization has submitted a balance sheet as of September 30, as follows:

ASSETS.

Real estate	$1,100,115.20
Buildings and machinery	2,537,912.98
Accounts receivable	266,711.09
Brick	273,383.76
Supplies	78,190.67
Bills receivable	11,602.09
Yard No. 1	113,184.51
Cash	3,109.53
Total	$4,384,209.83

LIABILITIES.

Capital stock	$4,000,000.00
Accounts payable	89,926.13
Bills payable	66,800.00
Surplus	227,483.70
Total	$4,384,209.83

SAND OR LIME BRICK OR BLOCK NEWS.

Henry Weltz of Savannah, Ill., has bought land at Yorktown and will build a cement tile factory there.

The Kansas City (Mo.) Gray Brick Co. plant at Bonner Springs, Kans., is said to be sold the 22nd of December.

Bryan Bros. Mfg. Co., Perry, Iowa, is now producing cement brick and tile in large quantities, employing twenty men.

The Rochester Sandstone Brick Co., Shelby, Mich., is doing a good business and has all the orders the company can handle.

Frank Hiskett has been experimenting on the manufacture of white cement brick and is figuring on making them at Louisiana, Mo.

The Lincoln (Ill.) Sand & Gravel Co. is building a new concrete tile plant south of the city. They will start making tile as soon as the machinery is all in.

S. W. Gooch and M. A. Harris of Selmer, Tenn., will soon manufacture brick by a new patent chemical process, patented by W. L. Sanderson of Byhalia, Miss.

The Natchez, Miss., municipal tile plant is now in operation making tile from 12 to 24 inches in diameter. Street commissioner Rutherford has charge of the work.

William Strong, manager of the Montana Granite Brick Co. at Helena, Mont., attended the National Assn. of Sand Lime Brick manufacturers recently held at Buffalo, N. Y.

W. H. Crume, president of the Crume Brick Co., Dayton, O., read a paper on the manufacture of sandstone brick at the National meeting which was just held at Buffalo, N. Y.

The Manufacturers Association of Salt Lake City, Utah, is trying to locate a sand-lime brick industry in that city and tests are being made of the sands for that purpose. Michigan parties are being considered.

Isaac Brendon & Bros., Inc., has been incorporated at Jersey City, N. J., with $75,000 capital stock, by Hugo S. Mack, William Kaufman and Emile Pincus. The company is to manufacture brick, cement and stone building materials.

The Black Hills Brick Co., Rapid City, S. Dak., has been incorporated with $500,000 capital stock by A. O. Figge, C. N. Monk and H. F. Perry. The location of the plant is likely to be at Canyon Lake where a fine deposit of sand can be found.

The Wisconsin Sand & Gravel Co., Janesville, Wis., has been organized by J. Rubin, George Rubin, and J. H. Krause of Rockford, Ill., and S. W. Rostein of Janesville, and have bought the property of the Janesville Cement Post Co., and the company goes out of existence.

The Concrete Stone & Gravel Co., of Tacoma, Wash., is installing machinery to make concrete brick, the proprietors having organized the Tacoma Cement Glazed Pipe Co., for this purpose. The officers are R. M. Thompson, president and treasurer; C. W. Thompson, vice-president and secretary.

The Janesville (Wis.) Granite Brick & Stone Co. have purchased a 10 acre site north of the Rock Island tracks at Oklahoma City, Okla., and will remove their Janesville plant there and build a $75,000 plant. The daily capacity will be 40,000 brick. R. L. Corley is the manager of the new company.

Haigh's New System of Continuous Kiln Arranged to Suit all Locations

These Kilns can be seen burning Roofing Tile, Drain Tile, Dry Pressed Facing, Fire, Paving and Common Building Brick

Points of Superiority: Cheapness in construction. Easy to understaud and operate. Perfectly free from any nuisance. Will save more than one-half of the fuel used on other Kilns. Specially adapted for Utilizing Waste Heat for Drying Purposes, and which is being done most successfully

Address, H. HAIGH, Catskill, N. Y.

MISCELLANEOUS ITEMS.

The Old Dover (Del.) Brick Yard has been sold to Joseph Bast for $5,800.

Arkansas City, Kansas wants a brick works of large proportions, says Mayor Hess.

The Builders Brick Co., Hertford, N. C., has been organized to manufacture brick, etc.

The L. W. May Brick Co. has bought the Summit (Miss.) Brick & Tile Mfg. Co.'s plant and will operate same.

The management of the West Concord (Minn.) Brick & Tile Works will enlarge and make many improvements to their plant.

One hundred cars of brick and tile is the monthly output of the Ottumwa (Ia.) Brick & Construction Co. from their large plant west of the city.

The Susquehanna Fire Clay Co., Edgewater, N. J., has been incorporated with $30,000 capital stock by E. J. Forhan, J. J. Harper and G. F. Martin.

The plant and property of the Dillsburg (Pa.) Vitrified Brick & Tile Co. has been sold to Attorney Weaver of Carlisle, who was acting in the interest of the bondholders.

The Giddings (Texas) Pressed Brick Co. is having a switch track put into their works so that they can further develop their property. They will also add two more kilns to the plant.

The Chamber of Commerce of Hobart, Okla., have made arrangements with E. C. Murphy and associates, to build a brick plant to make 20,000 brick daily and have same ready for operation by March.

The Zanesville (Ohio) Floor & Wall Tile Co. has been incorporated by W. W. Harper, J. F. Brown, J. W. McCoy, J. B. Owens and H. C. Van Voorhis. They already have a plant which is now working full time.

The Begley-McDonnell Brick Co. has been incorporated at Middletown, Conn., by J. J. McDonnell of Middletown, president and E. S. Begley of Meriden, secretary and treasurer. Their brick yard is at Smith's Crossing.

The Harms Brick Co., Glenview, Ill., has been organized with $60,000 capital stock. The incorporators are Charles Harms, John Harms and Alfred Duesing. The company takes over the plant operated by John R. Harms.

The Teoloycuan Brick Co. has been incorporated to engage in the manufacture of brick. The incorporators are: M. G. Bender of Brooklyn, N. Y.; K. R. Norton of Jersey City, N. J.; B. Cooke of Englewood, N. J., and J. N. Satterfield of Dover, Del. It's a Dover incorporation.

The Morrison-Trammell Brick Co.'s plant at Rome, Ga. has been sold to D. B. Hamilton, Jr., and C. C. Harper, who have organized the Standard Sewer Pipe Co., and will install machinery to manufacture sewer pipe. Messrs Morrison-Trammell and associates will open a new brick works on the west side of town.

Rush L. De Wise is now the sole owner of the brick and tile factory at Sac City, Iowa.

The Corning (Ohio) Brick Co. has about completed one of the best equipped and modern constructed brick plants in the state of Ohio.

Robert Sheron will erect a four-kiln tile factory north of the Rolling Mill at Marion, Ind., and expects to have same ready to operate by the new year.

The Mangum (Okla.) Brick Co. has been incorporated with $20,000 capital stock. The incorporators are: D. J. Doyle, Jasper Ledbetter and Lee Hawkins.

The Star Brick Co., Nowata, Okla., under the able management of J. J. Riner, is now making a splendid brick. They just completed burning a large kiln which are very good.

The Cheyenne (Wyoming) Brick Co. has been organized with $50,000 capital stock by T. A. Cosgriff and other local people. Shale will be hauled 45 miles from Iron Mountain station.

The Northern Brick & Supply Co., 661 Gilfillan Bldg., St. Paul, Minn., have refitted their offices and now have a most complete show room in which to display their samples of Building materials.

The plant of the Dover Fire Brick Co., at Gleaston, Pa., has been taken over by Troy, N. Y., capitalists. The officers are: William C. Geer, president; Wm. Sleicher, vice-president; H. S. Sleicher, secretary and treasurer. Under the new control the plant will be greatly enlarged; it is now paying one per cent a month dividends.

The Trumbull Brick Co., of Youngstown, O., has been incorporated with $50,000 capital stock. The incorporators are Charles Crook, J. G. Butler, Jr., E. E. Klooz, J. B. Chambers and H. H. Hoffmaster. This is a reorganization of the Leavittsburg Brick Co., and the office is to be removed from Warren to Youngstown.

NOTICE

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AMERICAN PROCESS CO.,
68 William St. **NEW YORK CITY**

The North Collins (N. Y.) Shale Brick Co., has been incorporated with $25,000. The principal office will be in Buffalo.

The Louisville (Ky.) Sewer Pipe Co., Lincoln Bank Bldg., has been incorporated by Robt. S. Brandies, L. Frankel and F. B. Moss.

The Tennessee Refining Co., Black Fox, Tenn., will install machinery for making pressed and enameled brick. W. E. Ragsdale is manager.

The Atlantic Brick Mfg. Co., May's Landing, N. J., closed their plant for the winter, having several million brick in stock at their yards.

The Hammond (W. Va.) Fire Brick Co., whose plant was burned to the ground a few weeks ago, will rebuild with fireproof buildings as soon as possible.

W. H. Segnor, supt. of a brick works at Ridgway, Pa., has moved to Johnsonburg, Pa., where he will be connected with a new brick works in that place.

James Devlin, of Iola, Kansas, has contracted to build a brick plant at Pawhuska, Okla., and will begin work the first of the year. His plant will employ 60 men.

The North & Frazier Tile Works at Bluffton, Ind., started operation last week. The plant is in charge of Mr. North, of Portland, who is an experienced tile maker.

James Finch, supt. of the Edwards Vit. Brick & Sewer Pipe Co., at Albion, Ill., has sold his interests to Mr. McDaniel, of Vincennes, and resigned, and will enter the mercantile business.

The Southern Minnesota Brick & Tile Co., Austin, Minn., has let the contract to build their plant to the Nelson Construction Co., of Mason City, Ia. Consideration, $175,000. W. H. Gleason, of Mason City, is president.

The Junction City (O.) Clay Products Co., recently held a meeting at Southern Hotel, Columbus, O., and decided to enlarge the business. J. H. Coleman is president of the company and E. A. Young of Somerville, secretary.

The Little Rock Refiners Clay Co., Little Rock, Ark., has increased its capital stock from $25,000 to $50,000. T. E. Walther is president and Jay Kerr is secretary and treasurer. The company was organized to operate a Fuller's earth plant.

B. F. Wiggins, of Monroeville, Ala., wants prices on brick making machinery.

The S. M. Johnson Brick Works at Minera, Texas, is to be opened at once. Capt. W. D. Green, of Seguin, is the manager.

The Taneha (Okla.) Townsite Co., wants a brick works and will give a site and contract for gas at 2½ cents a 1,000 cubic feet. (P. O. address Sapulpa).

The Mulford-Burke Brick Co., Los Angeles, Cali., has been incorporated with $100,000 capital stock by James K. Burke and others.

The Ft. Smith (Ark.) Vitrified Brick Co., has received an order for 1,000,000 brick for use in building the pipe line station at Kinta, Okla.

James Gamble has purchased a clay bank between San Bernardino and Colton, Cali., and will remove his brick yard from 9th street to the new site.

The Maysville (Ky.) Brick Yards, have closed down after a most successful season. The output was over 5,000,000 brick, all of which found good prices.

Calvin E. Schildknecht and Oscar B. Coblentz have purchased the Brookey Brick Works, opposite E. 5th street, at Frederick, Md., from Mrs. Ellen V. Brookey.

The Hobart (Okla.) Pressed Brick Co., has been incorporated with 10,000 capital stock. Directors are W. W. Rowland, J. C. Murphy, and E. S. Jones, of Hobart.

P. B. Lynch, of Vallejo, Cali., is associated with his father-in-law, James Clyne, a capitalist, at Benicia, in organizing a stock company to establish a brick works at Glen Cove, three miles east of Vallejo.

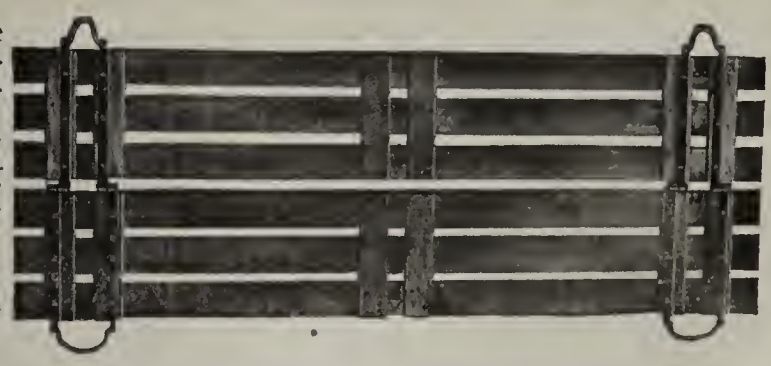
The leases of the Robinson and of the Baker Brick Works, at Denver, Colo., expire Jan. 1st, 1910, and the subdivision is to be divided and homes built upon same by the C. W. Fisher Investment Co., recently incorporated.

The Johnson Bros. Clay Works will be doubled in capacity at Clay Works, Webster Co., Ia., this winter. Its present capacity is 80,000 brick. They will build a twin plant and equip it with modern machinery. D. E. Johnson is now making the purchases.

The International Klinch Tile Co., Alexandria, Va., has been organized with $200,000 capital stock. The officers are: B. G. Smith, president, Washington, D. C.; A. D. Montier, vice-pres., Alexandria, Va.; E. H. Taggert, secretary and treasurer, Washington.

The Johnson Non-Detachable Folding and Sliding Deck

Is adap'ed for any style of Dryer Car



The deck can be placed on either side or center of the car for loading or unloading without removing from the car

The Johnson deck is a labor and material saver and is especially so when permanent kilns are used

The Johnson deck can be made of wood, steel or galvanized iron and of malleable iron or drop forgings.

For further information address

CHARLES H. JOHNSON, 1824 Greenleaf St., Chicago, Ill.

FOR SALE

One Penfield power Repress in first-class conditiou, capacity 10,000 per day, used only one month, write for particulars.

American Enameled Brick & Tile Co.
1 Madison Ave., New York City.

FOR SALE

One Four Mold Simpson Dry Press
One Fernholtz Pulverizer.
One 40 h. p. Engine and Boiler. Also shafting, pulleys, etc. Have extra mold box for dry press. Will sell all or any part of this machinery.

ED. SHANNON,
Shellsburg, Iowa

Second-Hand Brick Machinery For Sale

1 two-mold brick press.
1 three-mold brick press.
1 six-mold brick press.
1 42-inch clay pulverizer.
1 Freese stiff-mud auger machine, pug mill and cutter.
1 Centennial auger machine and cutter.
1 clay mixer.
2 small engines.
Let us know your wants.

Scott Manufacturing Company,
1811 Third National Bank Bldg. St. Louis, Mo.

FOR SALE

One No. 9A Brewer Tile Machine with hand Brick and Tile Cutters, Brick Dies and Tile Dies 3½ to 8 in. One 40 horse power Engine.

C. L. FINK,
Bricelyn, Minn.

WANTED

One good copy of the Clay Record, Number 10 Volume 16, to complete files for a ceramic school library. Address ROSS C. PURDY,
Ohio State University,
Columbus, Ohio

FOR SALE

Plans and Rights of Round Down-draft Continuous or Semi-Continuous Kilns. Both types possess new and improved features Address

William Radford,
Phoebus, Va.

FOR SALE

AT A HEAVY SACRIFICE for quick turn one half the stock (total stock $25,0 0) fully paid up, in dry pressed brick plant in Illinois city of 75,000. The plant now runing and in good condition, Plenty of clay and plenty of demand. Owner must sell as other business demands his whole attention, Snap for practical brick man. Any terms will be made on reasonable security. Act quick as owner will sell to first reasonable offer. Address "HASTE"
Care of Clay Record, Chicago, Ill.

HAMPTON'S KILNS

Burn 99 Percent Hard Brick and Tile
Old kilns easly changed.
Plans and yard rights cheap.
We Build Kilns and Guarantee Them
PITTSBURG KILN CONSTRUCTION CO.
1317 Montello Av., N. E. Washington, D. C.

BRICK PLANT FOR SALE

Well known and good market in the city of Minneapolis. Plant is running at present. Will sell equipment and yard including horses. If deal is made quick owner can make brick this fall for spring trade. Address

Minnesota, care Clay Record,
Chicago. Ill.

POSITION WANTED

Sand-lime brick manufacturer, 15 years experience, highest references, wants position as Manager or Superintendent of a sand-lime brick plant. Capable to build a plant, to run it and to make it pay. If you cannot make money now call upon me.

Address "SAND-LIME,"
Care of Clay Record, Chicago, Ill.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE

Sand-Lime Brick Plant in excellent condition, making granite pressed facing brick and standard grade of sterling quality. On four railroads, close to large markets, good trade, unable to fill orders now. A snap if taken at once. Write us.

Address "506" Care of Clay Record,
Chicago, Ill.

FOR SALE

The Entire Plant of The Powhatan Clay Mfg. Co.

Operating continuosly since 1893 at Clayville, Virginia, manufacturing the universally known Powhatan Front Bricks. The entire plant empracing 800 acres of land, employees' buildings, store, good will, etc., is offered at advantageous terms. Address,

14 North 7th St., Richmond, Va.

POSITION WANTED

A German Expert, 28 years of age, graduate of the Luban Ceramic School with complete knowledge of all branches in brick or clay industry, particularly in building and operating kilns. Speak German, Polish, Slavic and some English, wants a position in a Brick Yard or Clayworks.

Address LOUIS ZENKER,
194 4th Street, Passaic, N. J.

FOR SALE CHEAP

Four Mold Ross-Keller Brick Press in good working condition.

CHISHOLM, BOYD & WHITE CO.,
57th & Wallace Sts., Chicago, Ill.

FOR SALE

Two second hand American Clay Machinery Co. No. 2 Automatic Cutters.
One Western Wheel Scraper Co. No. 2 Jaw Crusher.

Hydraulic Press Brick Co.,
Brazil Brauch,
Brazil, Ind.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio

Address A. B. care Clay Record.
Chicago, Ill.

FOR SALE

A brick and tile plant in Greeu County, Iowa. Cannot supply the demand. All new machinery. Good reason for selling. Write for particulars to GREEN, Care of Clay Record
Chicago, Ill.

WANTED

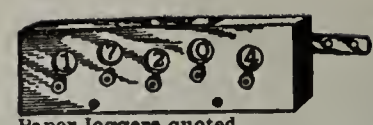
A young or middle aged man, of habits, strictly good, honest and reliable, one who is experienced in the manufacture of clay products and also able to handle correspondence pertaining thereto, and the use of machinery for the manufacture thereof, for position in sales department of reliable machinery manufacturer. In reply to this advertisement state salary that would be expected and give several references as to ability and character. Address.

Sales Dept. Care of Clay Record,
Chicago, Ill.

LOCATION OR PLANT WANTED

I am looking for a location or preferably a plant partially or ready to run for making clay products; such as drain tile builders and pavers, in fact a good shale and fire clay proposition, preferably in Indiana or Illinois, on good road or roads. Will buy a managing and sales managing interest or all if conditions are right. Address

"LOCATION" Care of Clay Record,
Chicago, Ill.



No better made, cut from $8 and $10, to
4 Wheel, $3.00
5 Wheel, $3.25
Guaranteed.
Sold by all dealers

Paper Joggers quoted.
R. A. HART, 41 White St., BATTLE CREEK, MICH.

GOOD OPENING FOR CAPITAL AND EXPERIENCE

For the purpose of making enlargements would like to interest capital in clay plant, have dry press and stiff mud outfits, making fire brick, face brick, hollow building tile, fire proofing and common brick. Located in the west and have a great advantage in freight rates over a good market on fire brick, fancy face brick, tile etc. Have immuense deposits of high- grade fire clay, several varieties of shale and unlimited quantities of good surface clay. Would prefer to interest parties practical in clay working and will offer good inducements.

A. N. M., Care of Clay Record,
Chicago, Ill.

WANTED

To sell all or a two-thirds interest in an up-to-date Brick Plant and Coal Miues, excellent shale for street block, 12 feet of fire clay, two coal mines, both operated with compressed air machine, with more orders than can be taken care of. An excellent proposition and a money maker, good reason for selling, Manager wants to go South. If interested write to, "BERT" Care of Clay Record
Chicago, Ill.

DRYER CARS

We have on hand a lot of secoud hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, Ohio

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick.
Address,

FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE

One Form Mold Berg Dry Press, good as new. Made about 200,000 brick. Guarenteed in good working order. Address

BUCKEYE FIRE BRICK & CLAY CO.,
Scioto Furnace, Ohio

CLAY PLANT WANTED

We are in the market for a Brick and Clay Works. one that is located as near to Chicago as possible, State all particulars in first letter.

Address "CLAY PLANT",
Care of Clay Record, Chicago, Ill.

FOR SALE

New Sand Lime Brick Hardening Cylinder, 6 feet diameter by 68 feet long. One removable head. Immediate shipment.

FRANKLIN BOILER WORKS CO.,
Troy, N. Y

PLANT FOR SALE

Very valuable Brick and Tile property ou James River, Va., complete stiff mud plant, 25 thousand capacity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7,00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles. Cheap fuel and labor; can operate with steam dryer, year around. Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments

W. L. JONES,
Lock Box 5, Williamsburg, Va.

Centrifugal Clay Screen

IN OUR NEW CENTRIFUGAL CLAY SCREEN WE HAVE A RADICAL DEPARTure in Clay Screens. The motion is centrifugal instead of vibratory. The life of the machine is thus lengthened and the capacity increased. As the cut shows the screen is made up of two hoppers substantially mounted on a steel frame. The screen plate is circular with large screening surface. It is supported by spiders in a horizontal position. The spiders are keyed to the vertical shaft which is connected to the driving shaft by a pair of bevel gears.

Just beneath the screen plate is a steam coil heater arranged to heat the screen plate to prevent damp clay from clogging perforations in the plate

Surrounding the vertical shaft is a cast iron hopper or spout through which the clay is fed on the screen plate. This hopper can be raised or lowered to regulate the flow of clay on the screen. The hopper being always full of clay keeps an even flow to the screen. The screen as it revoles throws the clay from the center to the outside of the screen plate, the flow being even and regular. The larger particles of clay, too large to pass through the perforations, pass over the screen plate to the outside and fall through the outer housing to a spout conveying them to the grinding pan for regrinding. The fine particles of clay sift through the screen plate into the inner housings or hopper and pass to a conveyor and into a clay bin.

The whole operation is rapid and thorough and the principle insures great capacity and freedom from troubles. Many of these screens have been installed and are giving universal satisfaction.

In actual operation the No. 147 Screen, which has a screen plate six feet in diameter, is screening equal to the capacity of two nine-foot dry pans. We also build this screen with a four-foot screen which will handle clay to the capacity of one pan. Full particulars as to construction and operation of this screen will be sent upon request

We build every machine and appliance required for the manufacture of every class of clay products by all processes. We are much the largest manufacturers of Clay Working Machinery in the world Manufacturing as we do every machine and appliance right in our own factories we are better prepared to serve you at a saving in time and money than are others.

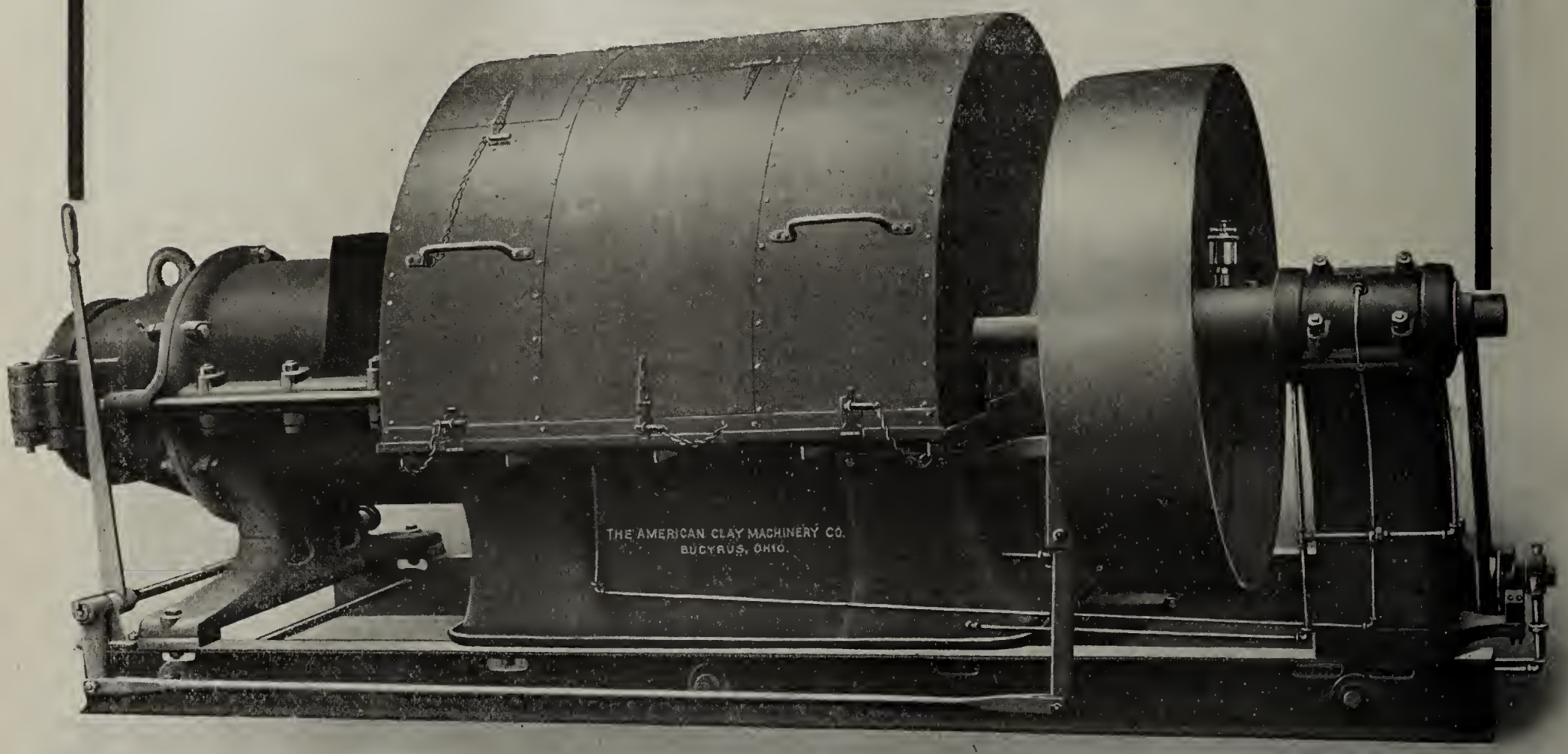
Built Right Run Right

The American Clay Machinery Company

Bucyrus, Ohio, U. S. A.

Built Right Run Right

Force Feed Oiling System for Clay Working Machinery



No. 65 Auger Machine Showing Force Feed Oiling System and Housing

The illustration shows our improved central oiling device for thrust bearings. By this improvement thrusts are oiled from the center instead of trying to get the oil to run from the periphery of the thrust plates to the center. The gravitation on a revolving plate or disc is from the center and not toward it, consequently by the old system there was no assurance that thrust plates received the proper amount of oil. Our new method of applying the oil by force feed to the center of the plates insured plenty of oil and free dom from repairs.

The second illustration shows the No. 65 Auger Brick Machine and Force Feed Oiler housed with a dust proof cover to protect the oiling system and the machine from dust and to protect the workmen. The housing is arranged with hinged doors so that the gearing and the bearings can be inspected at all times. The illustration also shows the No. 65 machine equipped with cut steel gearing. While this is an ideal equipment the oiling system can be applied to standard iron gearing.

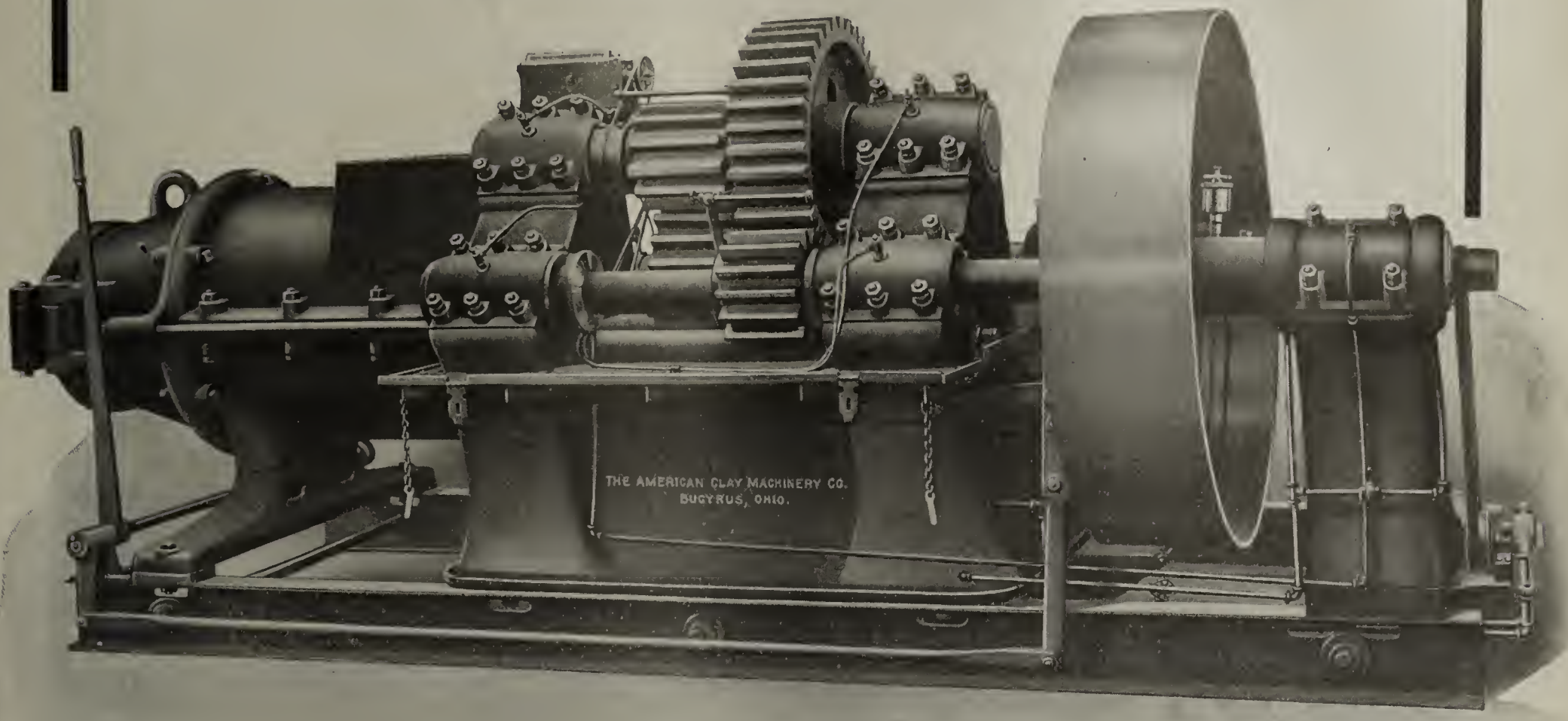
This Force Feed Sight Oiling System can be applied to any of our Clay Working Machines. Correspondence solicited.

We build every machine and appliance needed for making clay products by all processes.

The American Clay Machinery Co.

BUCYRUS, OHIO, U. S. A.

Force Feed Oiling System for Clay Worknig Machinery



No. 65 Auger Machine Showing Force Feed Oiling System, Housing Removed

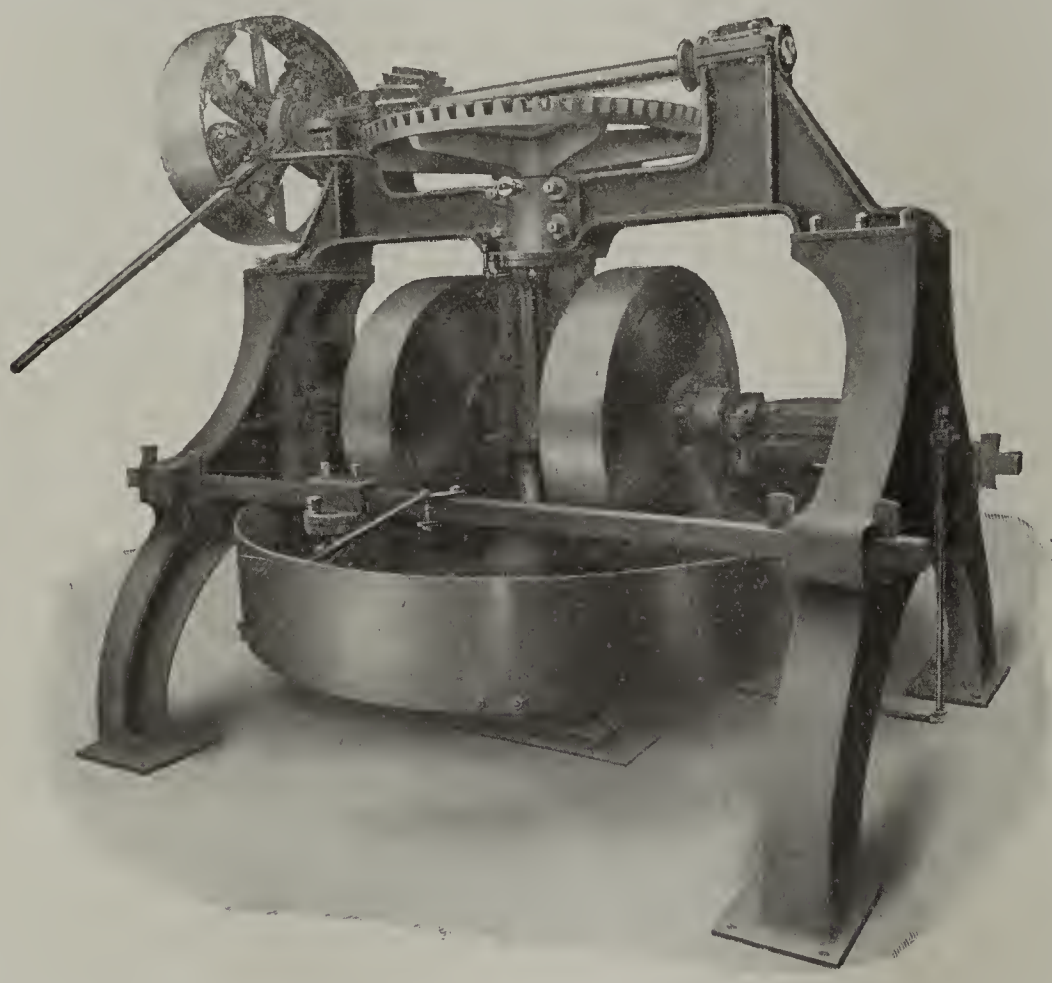
If your engineer persisted in forgetting to oil his engine you would get a new engineer. Our Clay Working Machinery is built as carefully as your engine and is entitled to as careful attention. We have been frequently blamed for inferior machinery when the trouble was entirely due to the failure to oil the machine. Our machinery is "Built Right" and will "Run Right," but it will not continue to run right without oil. In order to insure an adequate supply of oil and at the same time prevent a waste of lubricant, we have brought out a force feed oiling system which is here shown attached to our massive No. 65 Auger Brick Machine. The oiling system consists of a force sight feed pump device driven by either belt or ratchet. Each bearing is connected by a pipe leading from the force pump and each bearing has its individual sight feed so that any one can see that each bearing is receiving the proper amount of oil. A catch pan which is made a part of the base of the Auger Machine receives all drip and the oil thus collected is saved. While this is a source of oil economy it is far more economical in saving bearings and gearings.

The American Clay Machinery Co.

BUCYRUS, OHIO, U. S. A.

Wet and Dry Pans

TO THE EXACTING BUYER OF DRY AND WET PANS OUR LINE APPEALS strongly because of the superiority of design and excellence of material and workmanship all of which are features which are of the greatest importance in the permanent satisfactory operation of pans. The capacity of a pan depends largely upon its design and construction, and the distinctive features embodied in our line of pans have given them a greater capacity than others and have insured more working hours per pan with fewer delays and repairs than can be had from other styles of pans. We have been generous in the design of each pan our lines being the heaviest on the market. This feature should be given special consideration as a lighter weight pan is necessarily much cheaper and should not be compared with our heavy, durable and efficient machines.



The heavy side frames are substantially tied together at the top by the cross beam, in the center by tie bars and also on the floor line. The shafting is large and of steel. The gears are of special design and excellent quality. The bearings are long and well babitted. The mullers are heavy, adjustable and removable. The screen plates are made of special iron. The step is of our approved type and the complete pan is one that can be depended upon under more than ordinary circumstances. All joints are carefully machined and fitted and bolts are made secure by lock-nuts. The vertical shaft and muller shafts are secured by large removable bearings, which make it possible to remove any of these shaftsor the mullers without disturbing the balance of the pan. The gearing is kept to its full efficiency by our device for taking up any possible wear, which insures a perfect mesh of teeth at all times.

For preparing successfully many kinds of fire clay, shale and slate used for paving brick, and for grinding burnt brick or pipe for grout, etc., dry or wet pans are a necessity. The wet pans are particularly adapted for handling material in moist condition, while for use in dry pans it should be practically dry, so that when ground, it will readily pass through the screen plate without clogging.

Write for particulars on our "Divided Screen Plate" which will make a big saving of screen plates. There in no machine required for the manufacture of any clay product which we do not build. Each machine is superior in it's class and of our standard quality.

Built Right Run Right

The American Clay Machinery Company

Bucyrus, Ohio, U. S. A.

Built Right Run Right

THE BOSS SYSTEM OF BURNING BRICK

Involves the ORIGINAL PRINCIPLE of applying AIR UNDER PRESSURE.

Applies to Any Style of Kiln.

Absolute Control of Heat in Kiln.

WRITE FOR CATALOG

40% Reduction in Fuel Cost.

Burns All First-Class Hard Brick

JOHN C. BOSS OFFICE: MONGER BLDG. **Elkhart, Indiana**

Do Your Brick Turn White?

HERE IS THE REMEDY.

PRECIPITATED

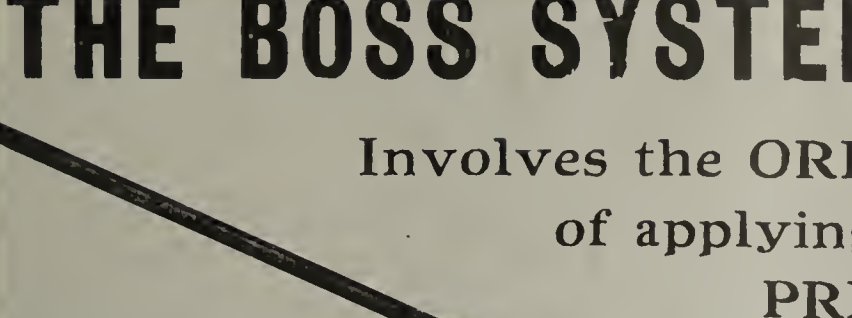
Carbonate (K.B. C.F.H.) **of Barytes**

The only preventative for scum and discoloration on facing Brick and Terra Cotta; neutralizing the Sulphate of Lime in the Clay and Water.

Circulars and Particulars on Application.

GABRIEL & SCHALL

205 Pearl Street NEW YORK P. O. Box 1712



Send for full descriptive Circulars

New CLAY FEEDERS and MIXERS for Brick, Tile and all Clay Working Plants

Saves the labor of from 1 to 2 men in every factory, besides mixing and feeding the clay evenly to the disintegrator

One of the many testimonials we have received from users of these Feeders

SUMMITVILLE DRAIN TILE COMPANY
Manufacturers of Porous Drain Tile

Harry L. Erlewine, Secy. and Treas.,
Marion Machine, Foundry and Supply Co., Marion, Indiana

Dear Sir:

Acknowledging your favor of the 21st inst., will state that the type "C" Feeder which we have installed in our plant here is "making good" in every way and is all you claim for it.

Since installing the Feeder we have been able to get along with two men less, thereby reducing our weekly pay-roll $20.00 and at the same time have increased our output 10% decreased our power 10%, and as our capacity is 1200 cars per year, you can easily see the great advantage we have since installing the Feeder and Mixer.

All this saving is effected because of the even, steady feeding of the clay to our disintegrator. We have our tracks elevated about 9 feet above your Feeder and Mixer, and we are enabled to dump about 25 car loads of clay in our storage bin over the Feeder, and the Feeder takes care of all this clay without any further attention on our part.

We feel that this is one of the most valuable machines we have in our plant and no one who has ever tried one of your Clay Feeders would go back to the old way. Thanking you for the courtesies shown, we remain

Very truly yours,

SUMMITVILLE DRAIN TILE CO., Per JAMES F. MORRIS, Vice-Pres.

MARION MACHINE, FOUNDRY and SUPPLY CO., Marion, Ind.

RICKETSON'S MORTAR COLORS — MILWAUKEE, WIS.

They Never Fade

Twenty long years of time and weather have tried out Ricketson's Famous Red Brick" Brand

..COLOR..

for Mortar, Brick, Cement, Stone, etc., Proves it Absolutely Permanent. Red, Brown, Buff, Purple, Black.

RICKETSON MINERAL PAINT WORKS
MILWAUKEE, WISCONSIN.

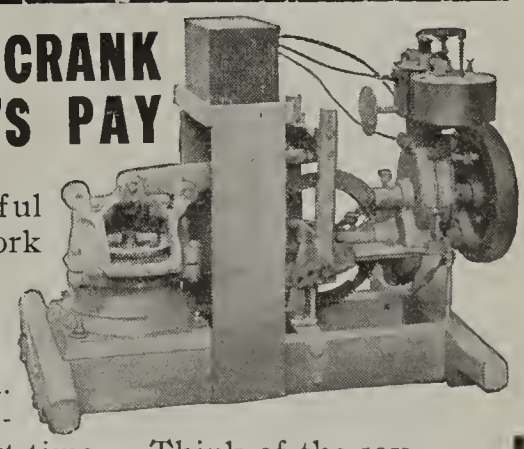
C. K. WILLIAMS & CO.

EASTON, PA.

BRICK AND MORTAR

COLORING

A TURN OF THE CRANK SAVES 2 MEN'S PAY



THIS wonderful pump does the work of two men, at a small fraction of their wages, and without argument.

It will pay for itself in a very short time. Think of the saving in dollars and cents, the saving in time, the gain in efficiency.

No contractor or engineer who has any quantity of water to contend with can efford to be wiihout the marvelous

Fuller & Johnson
Bilge Pump Engine

It doesn't need to be urged to do its best — it can't do anything else.

It is built with the same care and attention to details, the same thoroughness and honesty, as all Fuller & Johnson Engines.

It's always ready, day or night at a touch.

Each day you're without it you're throwing good money away.

Send for our Bulletin and see for yourself. (21)

Fuller & Johnson Mfg. Co.

Established 1840

458 2nd Street, - Madison, Wis.

Fire Brick——Fire Clay

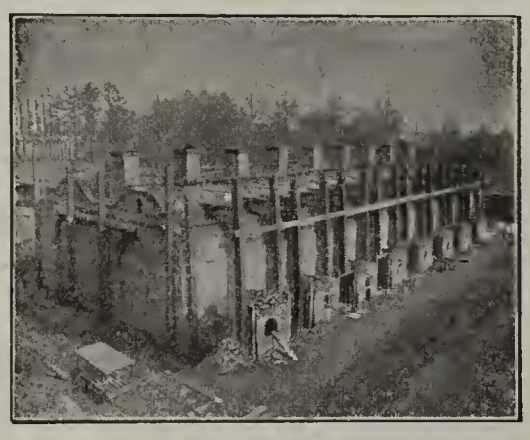
AND FIRE CLAY PRODUCTS

Manufactured out of highest grade Missouri semi-flint fire clay.
A large stock of Number One brick and shapes always on hand.
Let us quote you prices and we will save you money.
Samples sent upon request. Address

Mexico Brick & Fire Clay Co.

MEXICO, MISSOURI

Something New In Brick Kilns and Dryers



The Dennis Double Chamber Up and Down Draft Brick Kilns and Direct Heat and Hot Air Brick Dryers show many new features that make them superior to all others. Economical, durable and strong in construction and operation, having many points of dvantage that appeal to practical brickmakers. Patented April 14, 1903 and September 8, 1903 Brick plants installed and put in operation. Write for booklet. Correspondence solicited.

F. W. DENNIS,
145 Water St., Norfolk, Va.

Approved and Labeled

Fire! Fire!! Fire!!!

Extinguishers

Protect your Home, Business, Factory

Insurance Reduced. Child can Operate.
Made of Copper. Will Last a Lifetime.

Chemical charges can be procured at any drug store

Write today; don't wait; delays are dangerous.

O. J. Childs Company

Sole Manufacturers — Utica, N. Y.

AMERICAN RING-HAMMER PULVERIZER

Two Models, one for Clay, Shale, one for Rock

Will pulverize from 4 mesh to 200 mesh, 1 to 50 tons per hour, according to size of machine, fineness required, kind and condition of material.

30% to 60% less 3peed, and 25% to 50% less power, due to the RING and its utilization of CENTRIFUGAL FORCE.

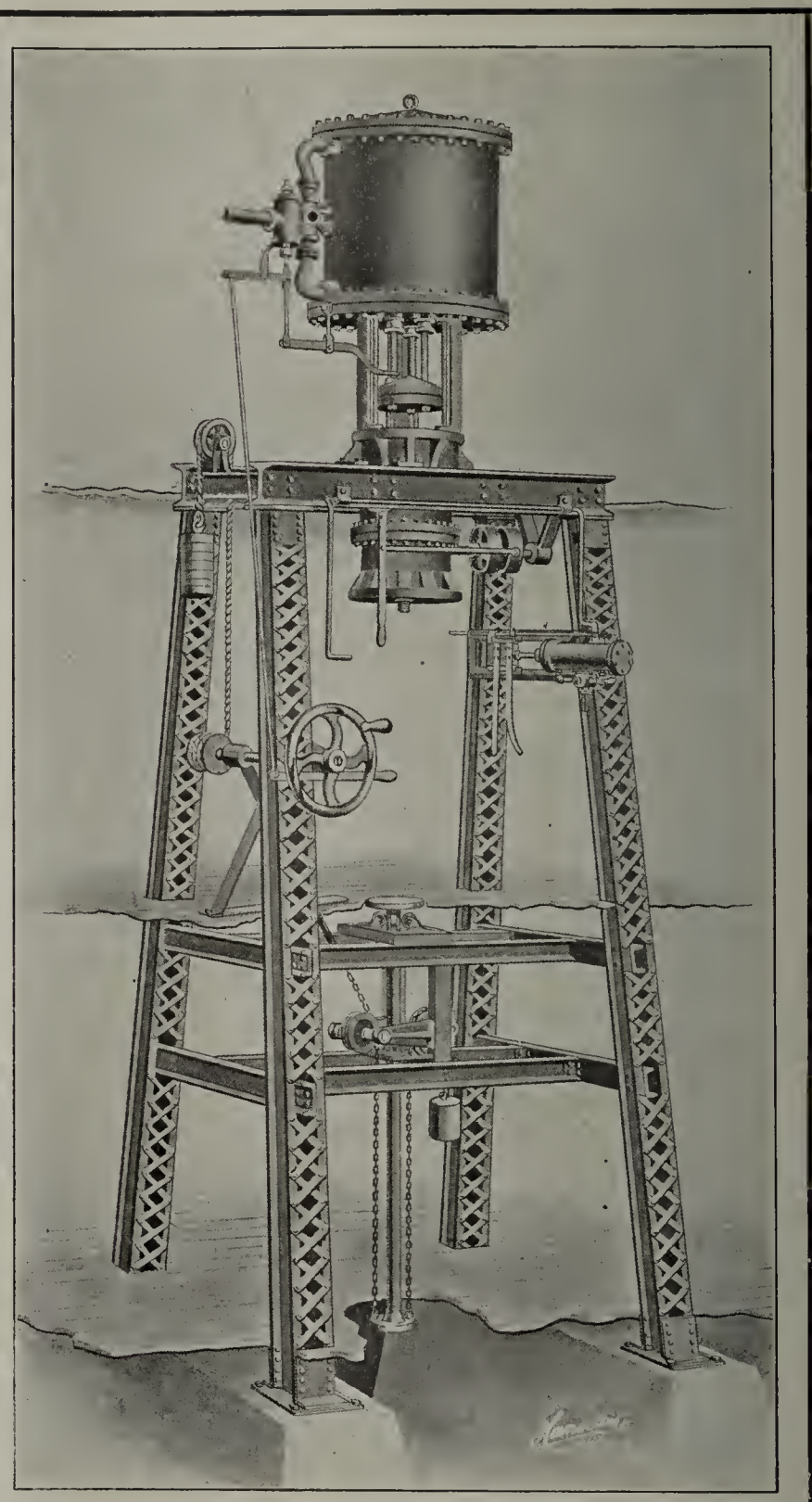
We make six sizes and every machine guaranteed to do the work which it is contracted to do when sold.

Revolving Screens Air Separators
Ask for Circulars and Information

AMERICAN PULVERIZER CO.

Suite 410 Jaccard Bldg., ST. LOUIS, MO.

DISTRICT SALES OFFICES:
F, C. Willis, 36 LaSalle St., Chicago, Ill.
I. R. Coles & Co., 39 Cortland St., New York City.
Lindrooth. Shubart & Co., Boston Bldg., Denver, Colo.



44 X 20 SEWER PIPE PRESS

SEWER-PIPE MACHINERY

COMPLETE EQUIPMENT

THE TURNER, VAUGHN & TAYLOR COMPANY

CUYAHOGA FALLS, O.

REBUILT ENGINES AND BOILERS

The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

ENGINES—Automatic—16x32 Buckeye, 15x14 Erie, 14¼x16 Buckeye, 14½x14 Ball & Wood, 13½x15 Taylor, 13x16 Erie, 12x14 Green, 12x12 N. Y. Safety, 10x10 Fisher, 9½x12 Leffel, 8x10 Allfree, etc.

ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

BOILERS—Stationary—72x18 High Pressure, 72x18 Standard, 72x16, 66x16, 60x20, 60x16, 54x16, 54x14, 54x12, 48x16, 48x14, 44x14, 40x12, 40x9, 36x16, 36x10, etc.

BOILERS—Fire Box—80, 60, 50, 40, 35, 30, 25. 20, 16, 12, 10 and 8 h. p., etc.

BOILERS—Vertical—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 3 h. p., etc.

HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

Saw Mills, Lath Mills, Edgers, Cut-Off Saws, Tanks, etc. Write for list.

Also fu l assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

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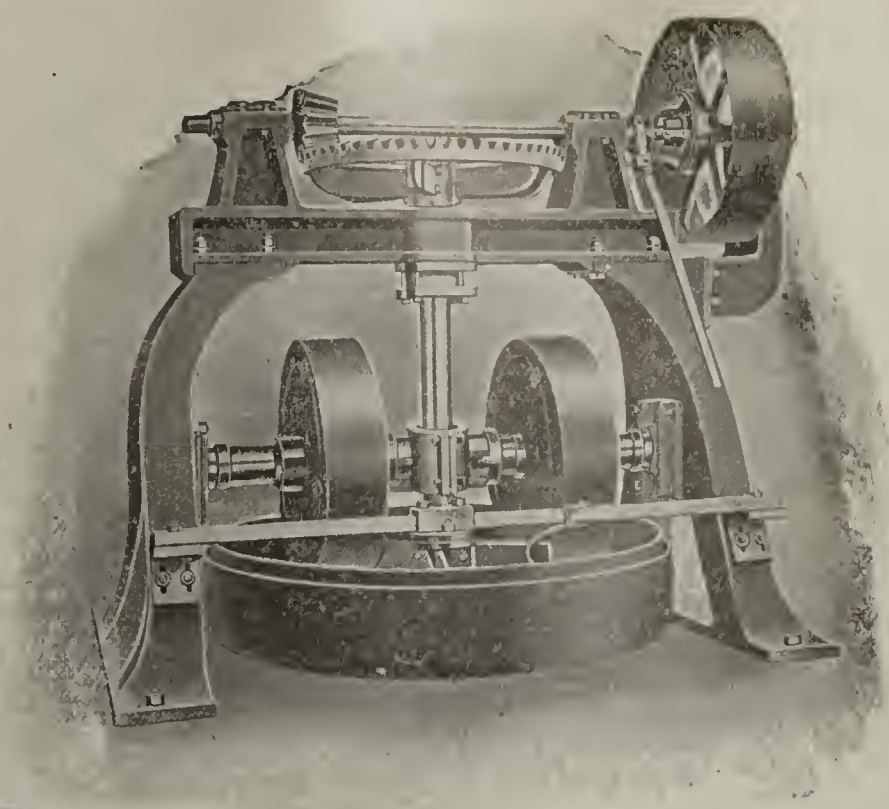

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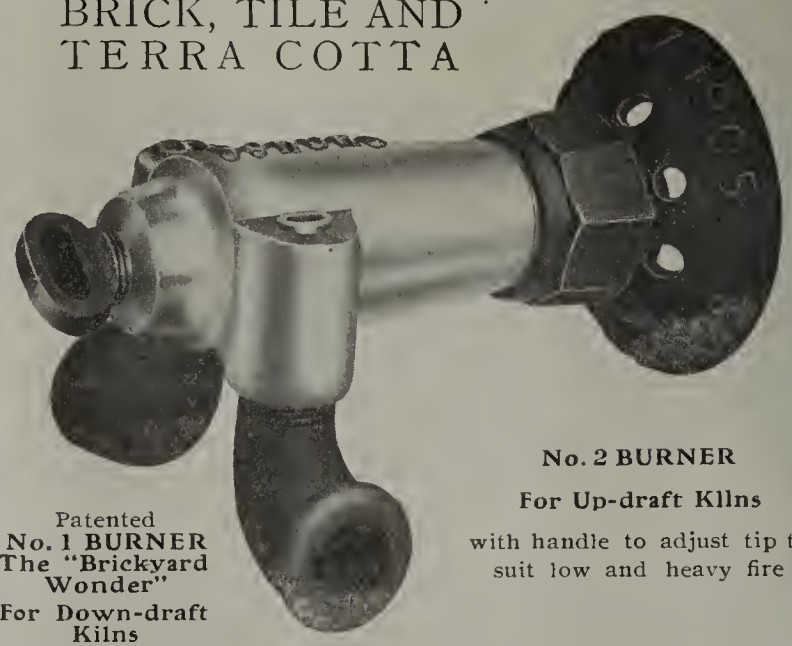

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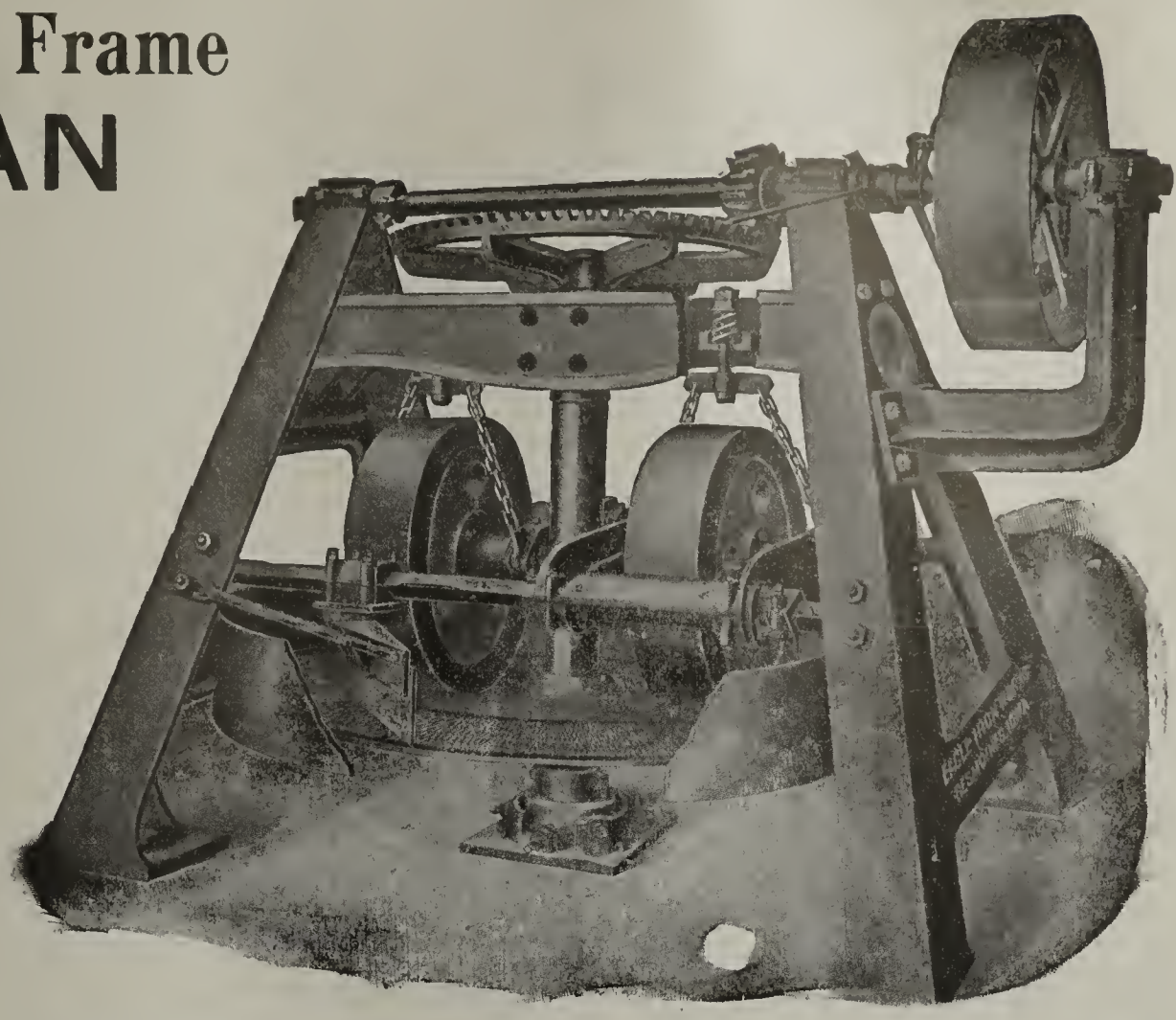

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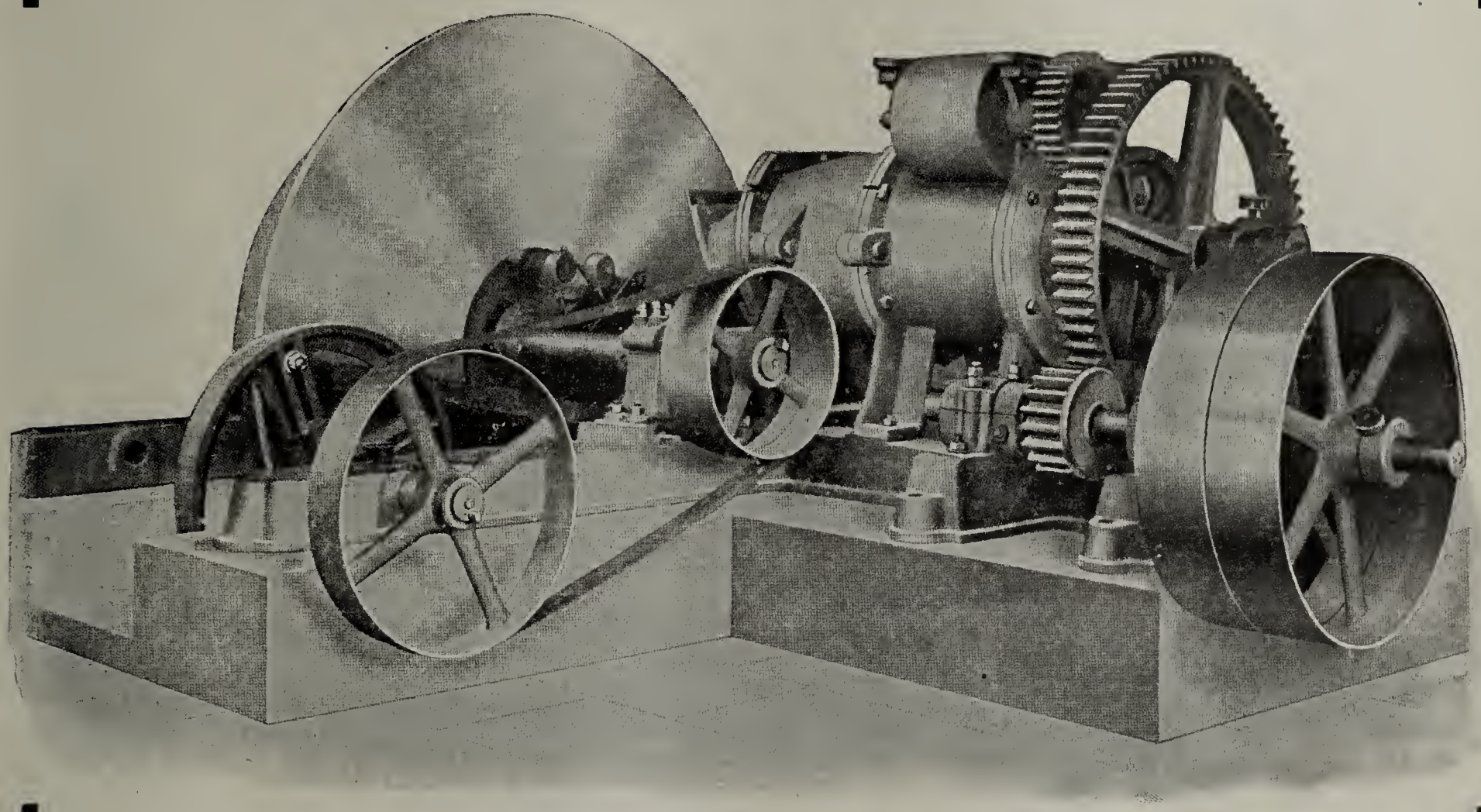

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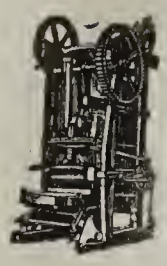

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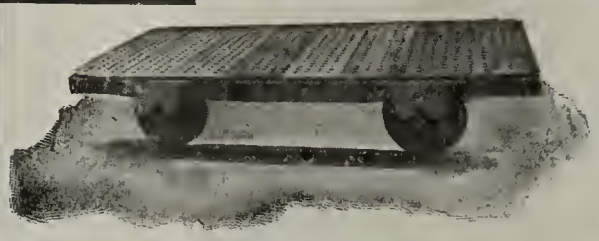

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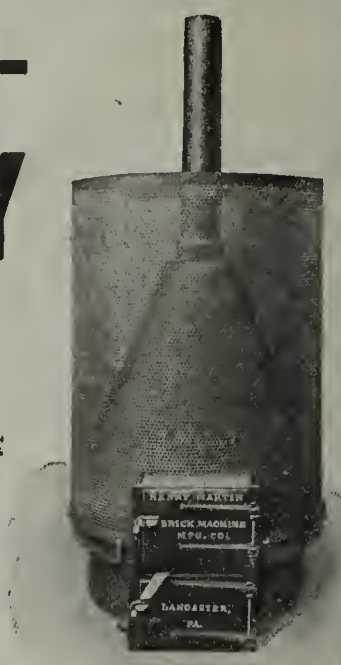

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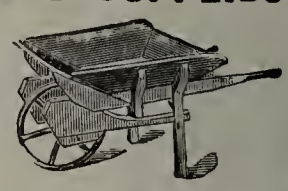

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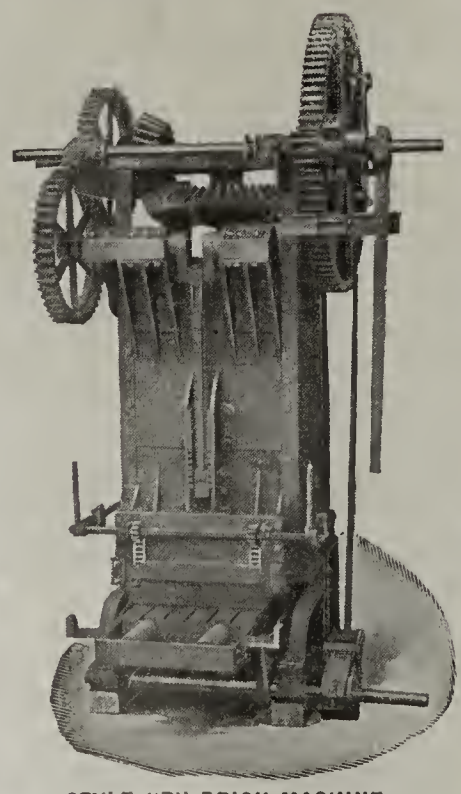

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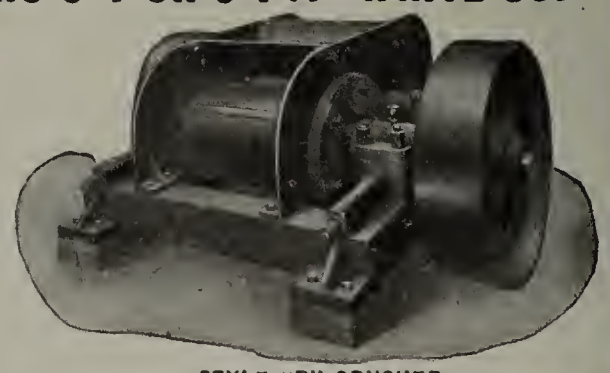

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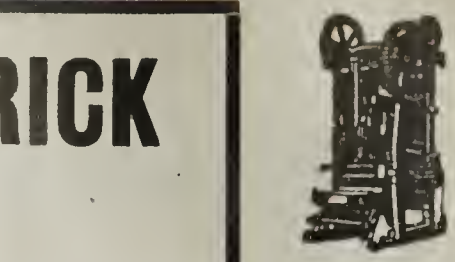

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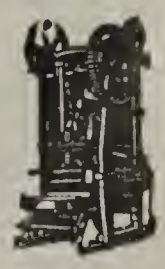

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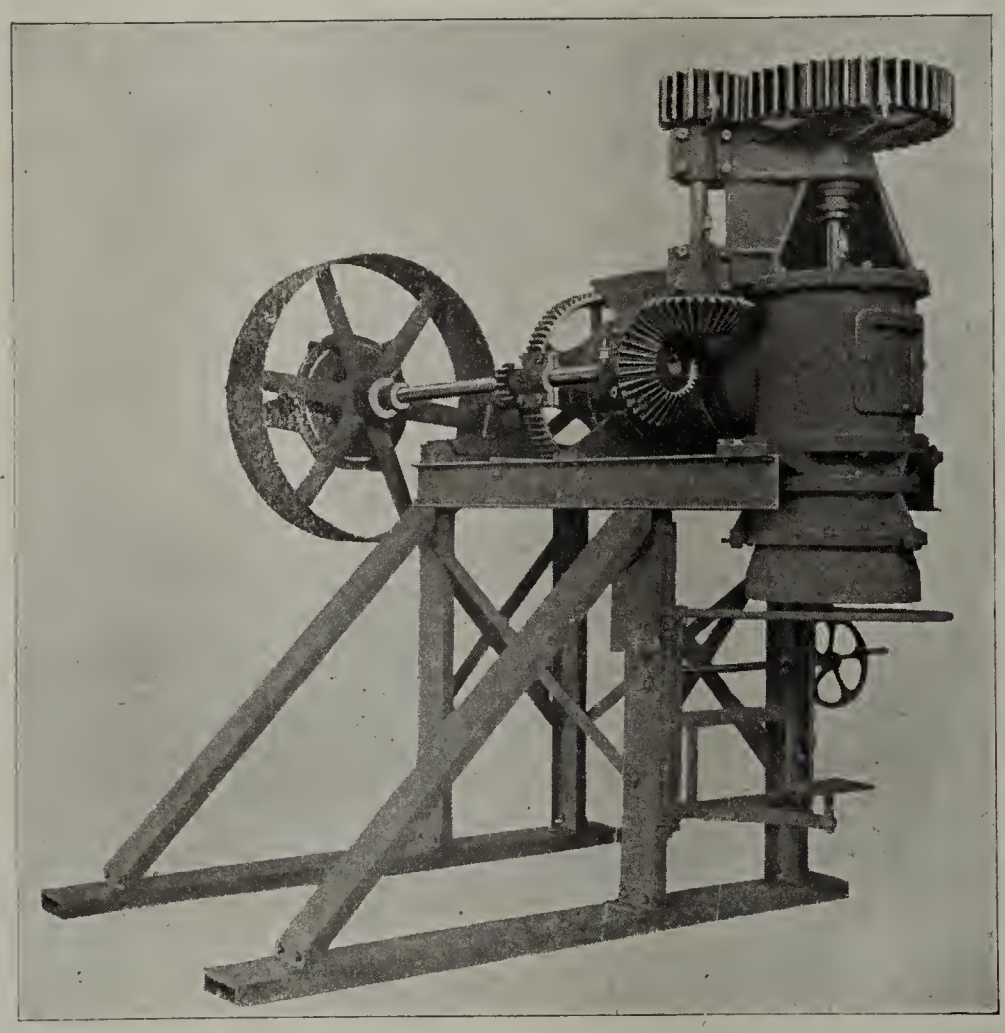

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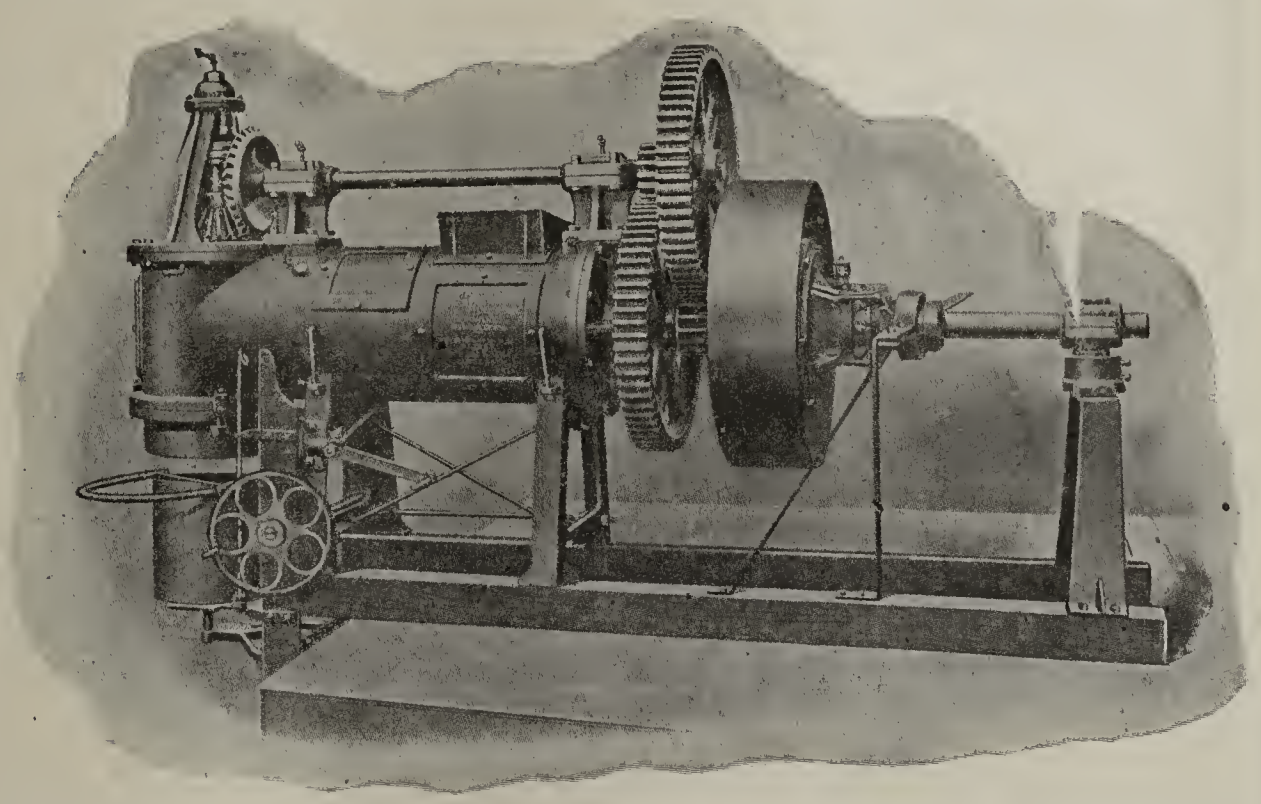

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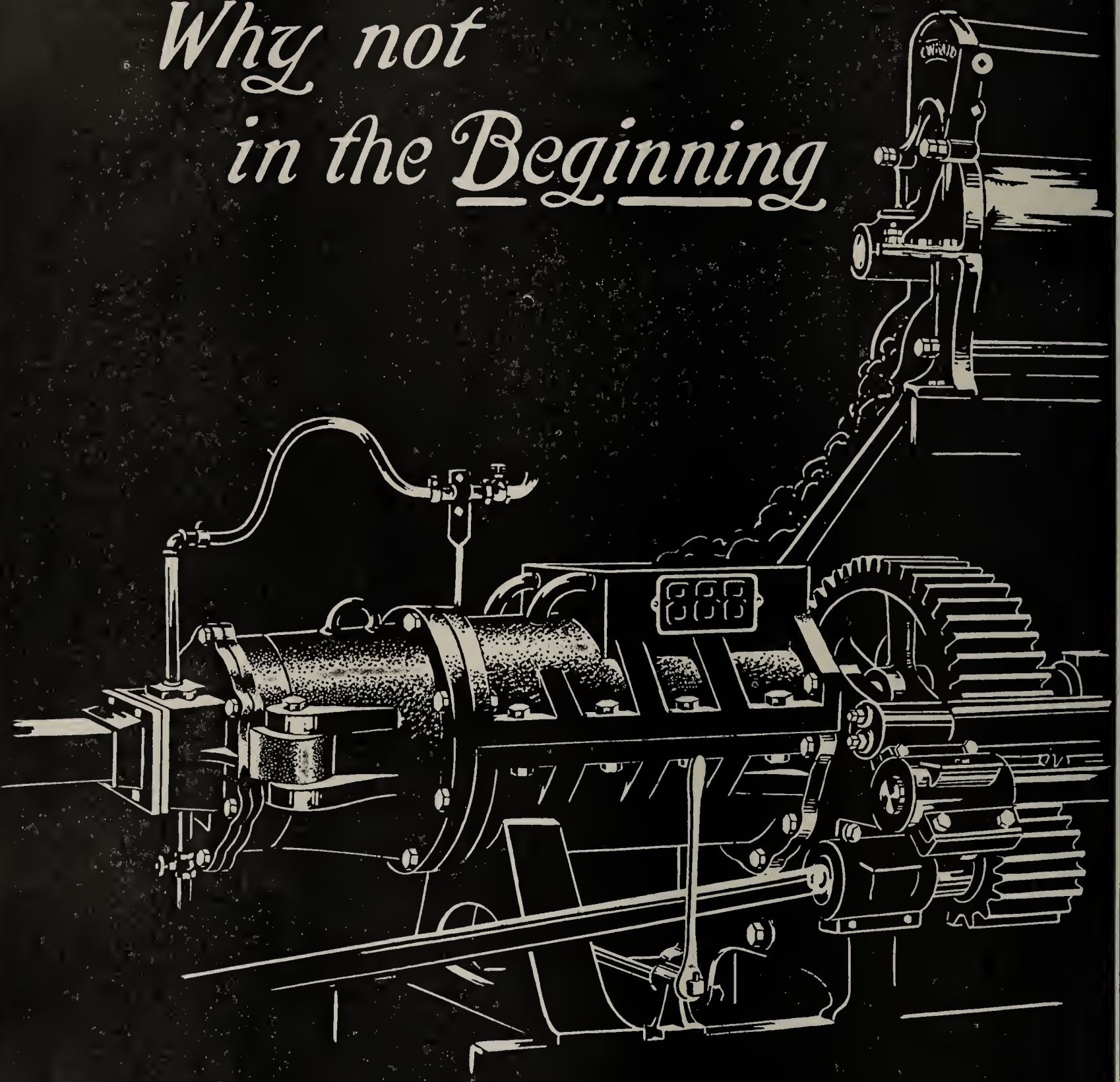

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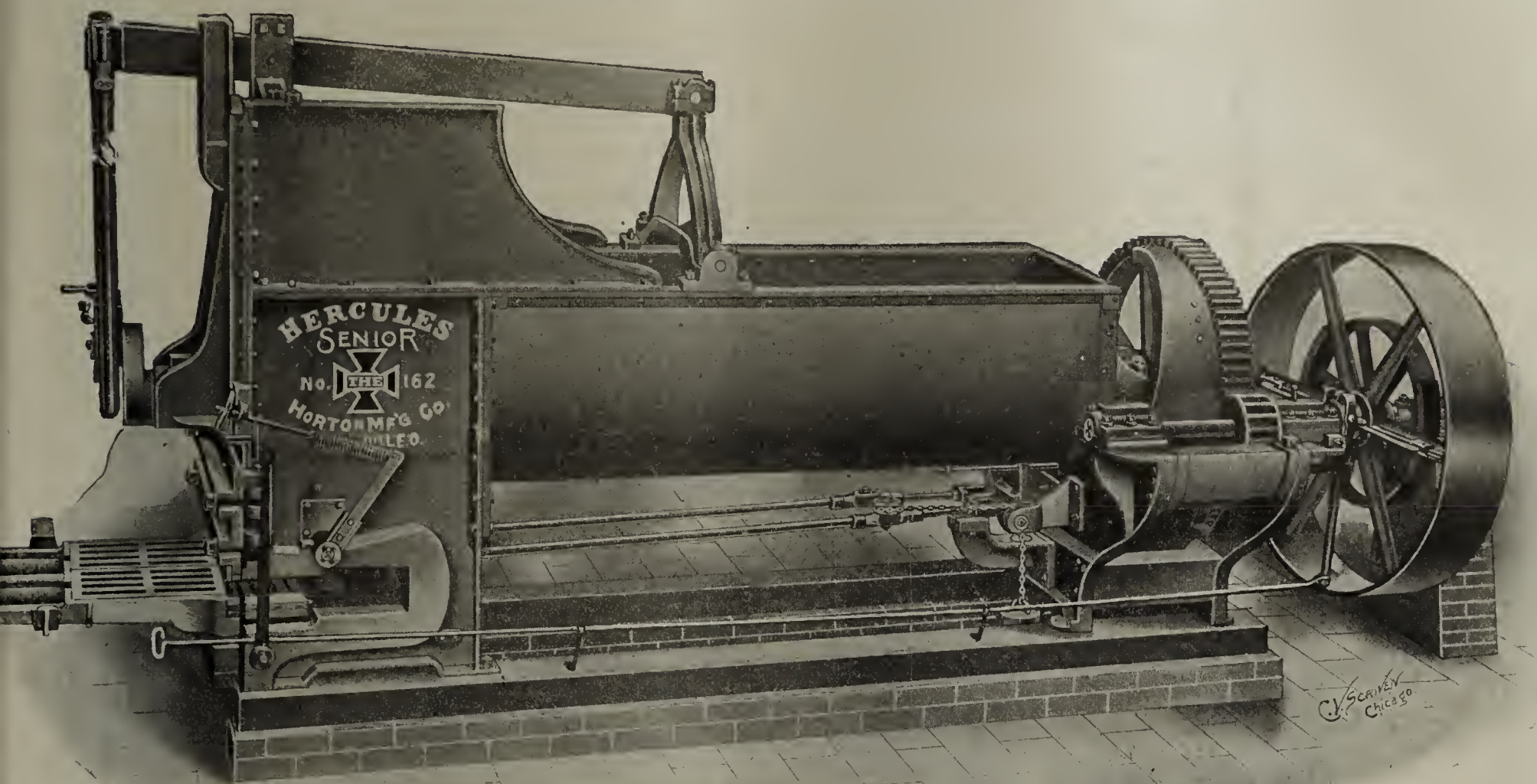

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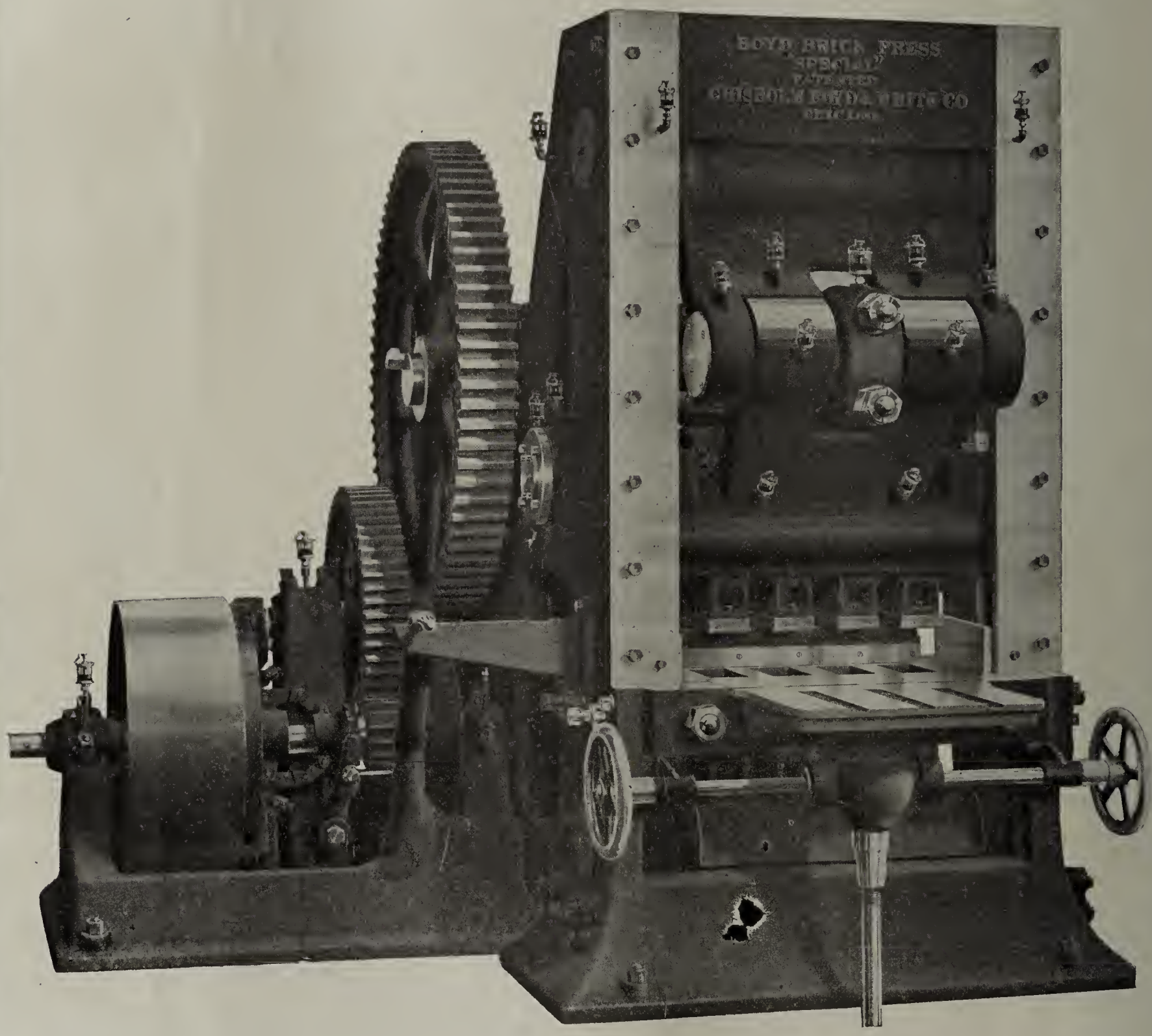

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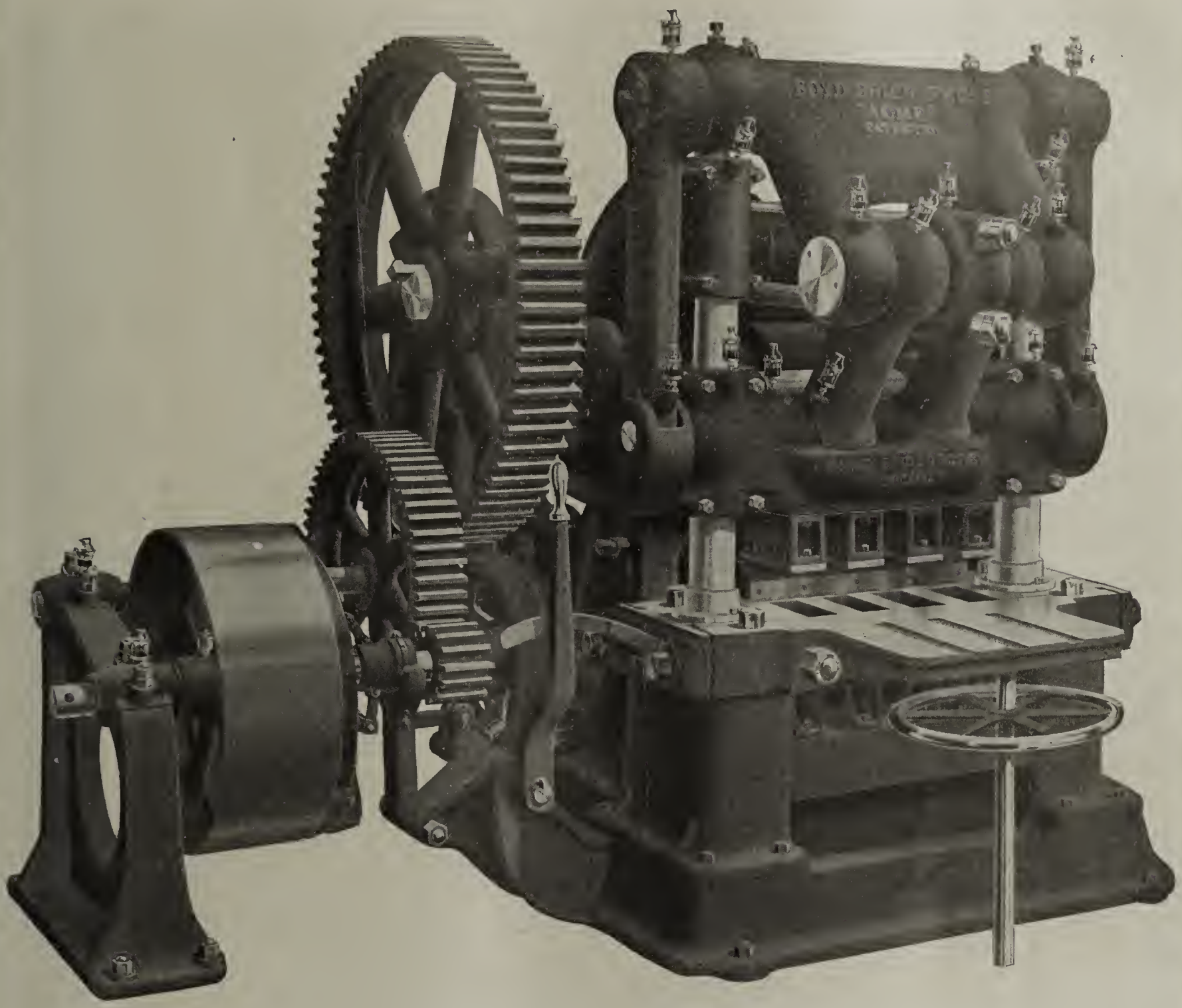

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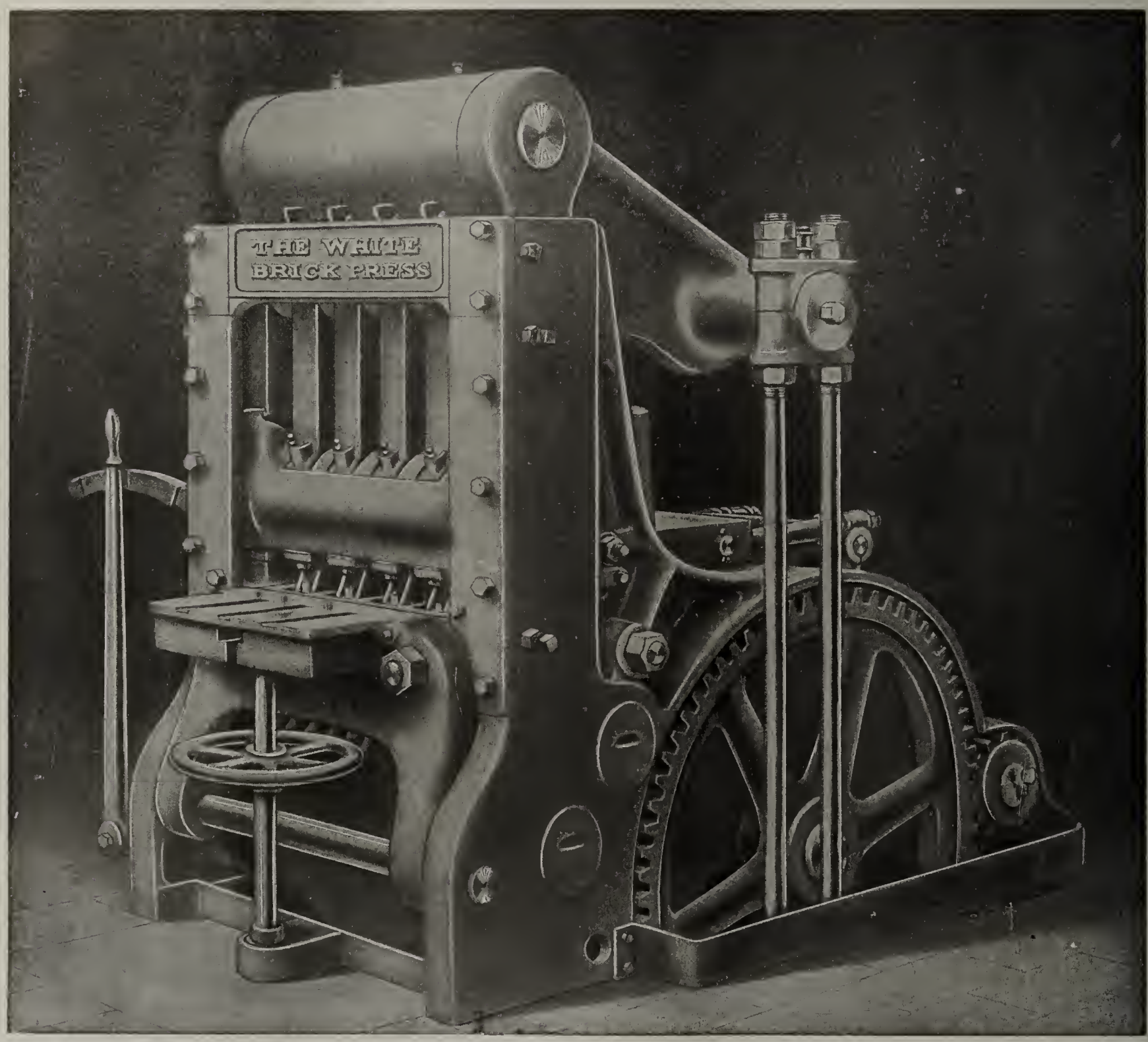

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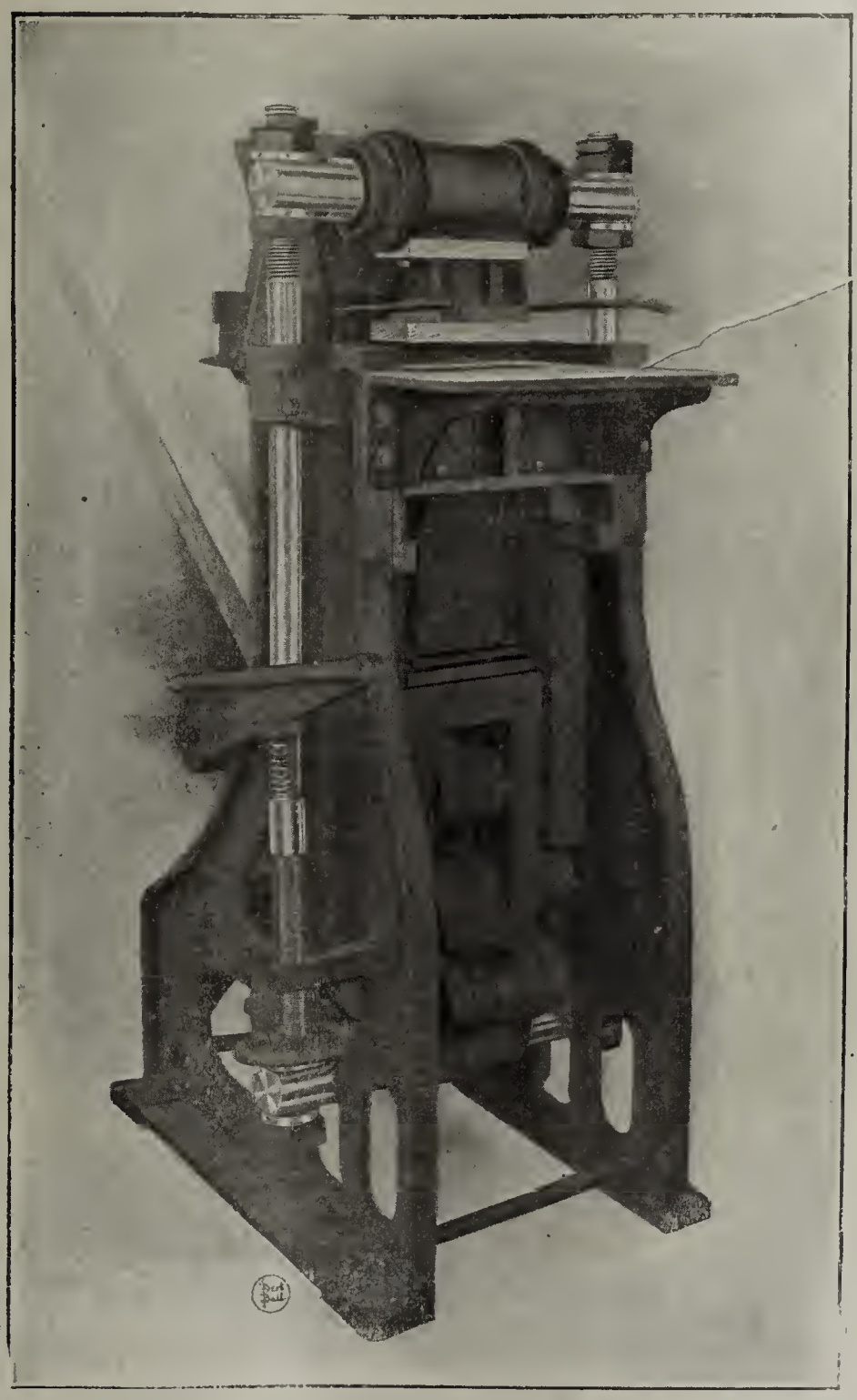

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BRICKS

This Hand Press makes Brick equal in density to those made on a power press. Every Brick *PERFECT*. Extensively used for ornamental and special design.

The Fernholtz Brick Machinery Co.

BOYLE AND OLD MENCHESTER, ST. LOUIS, MO.

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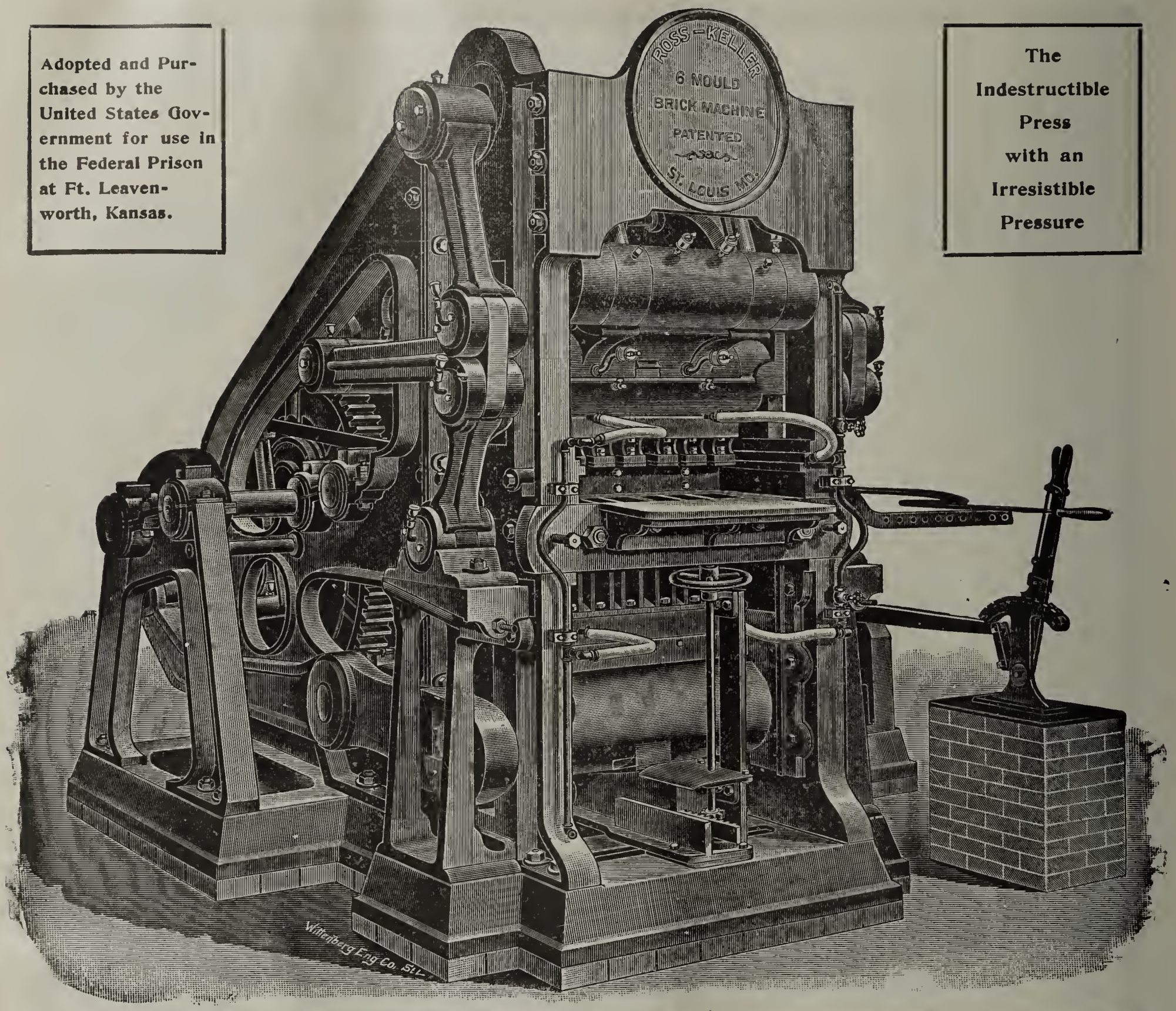

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The strongest and most efficient Brick Machine made, and the only Press that gives three distinct pressures to the brick

ROSS-KELLER TRIPLE PRESSURE BRICK MACHINE CO.

OFFICES FULLERTON BUILDING, - - - - - ST. LOUIS, MO.

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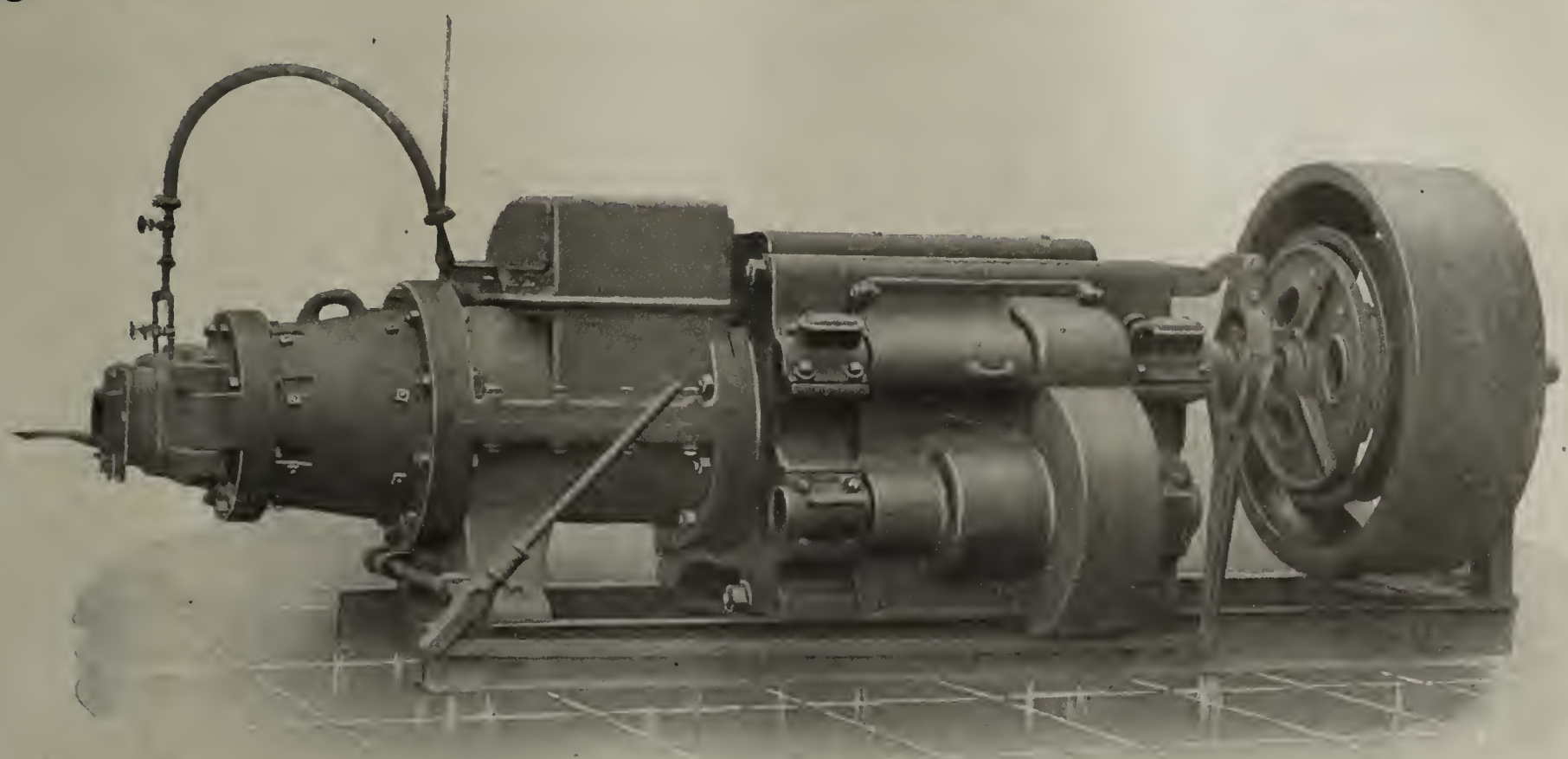

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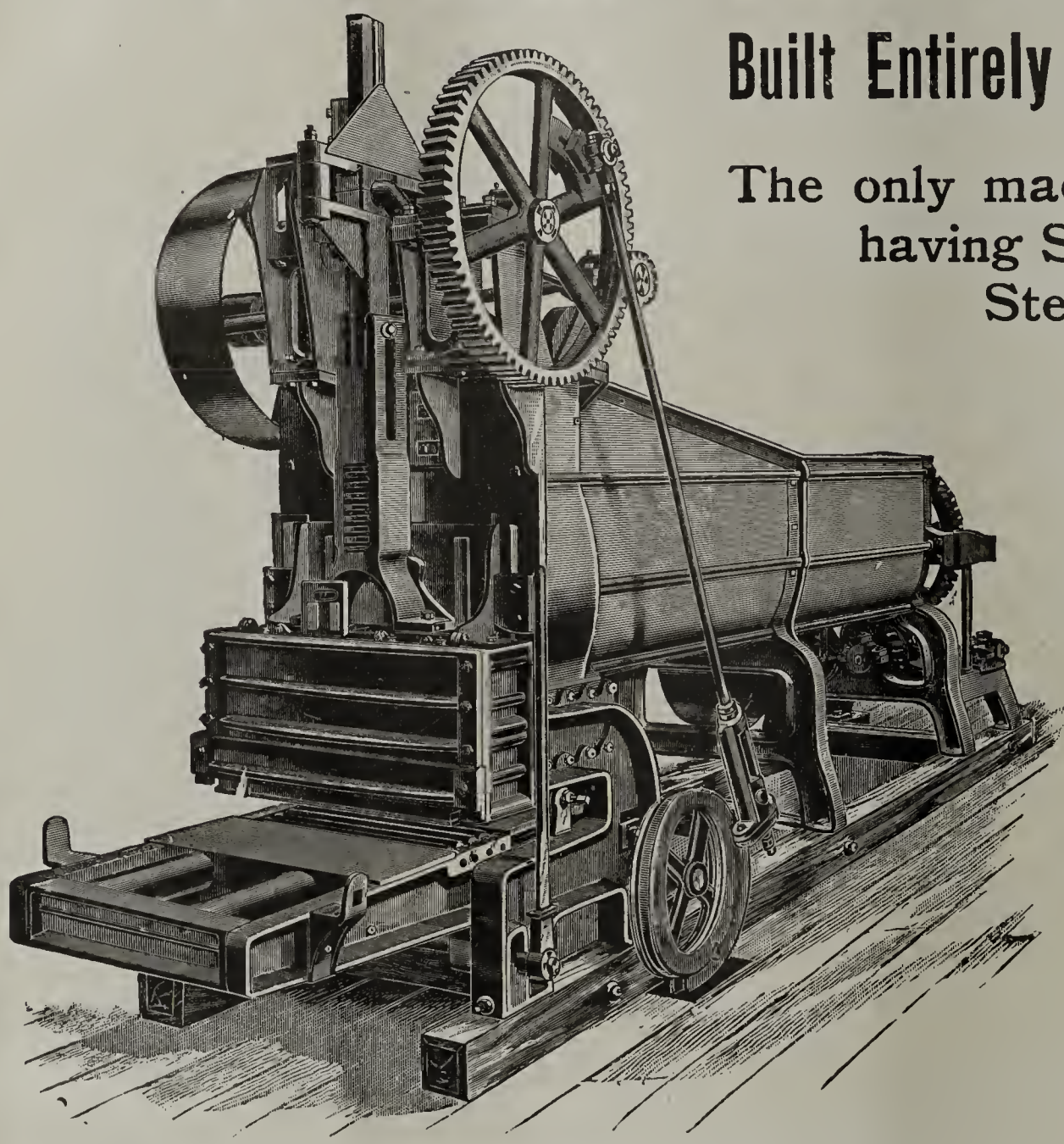

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No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

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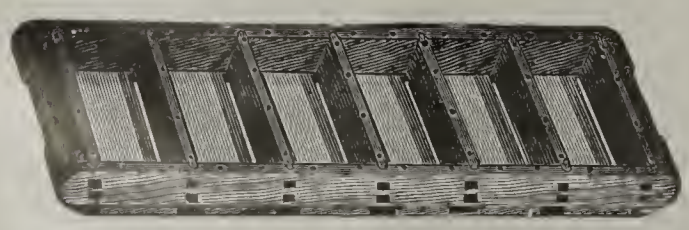

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As Manufactured by Potts

Are the best and most complete machines. Where the clay contains limestone, the Disintegrator will separate the large stones and the Crusher pulverize the small ones.

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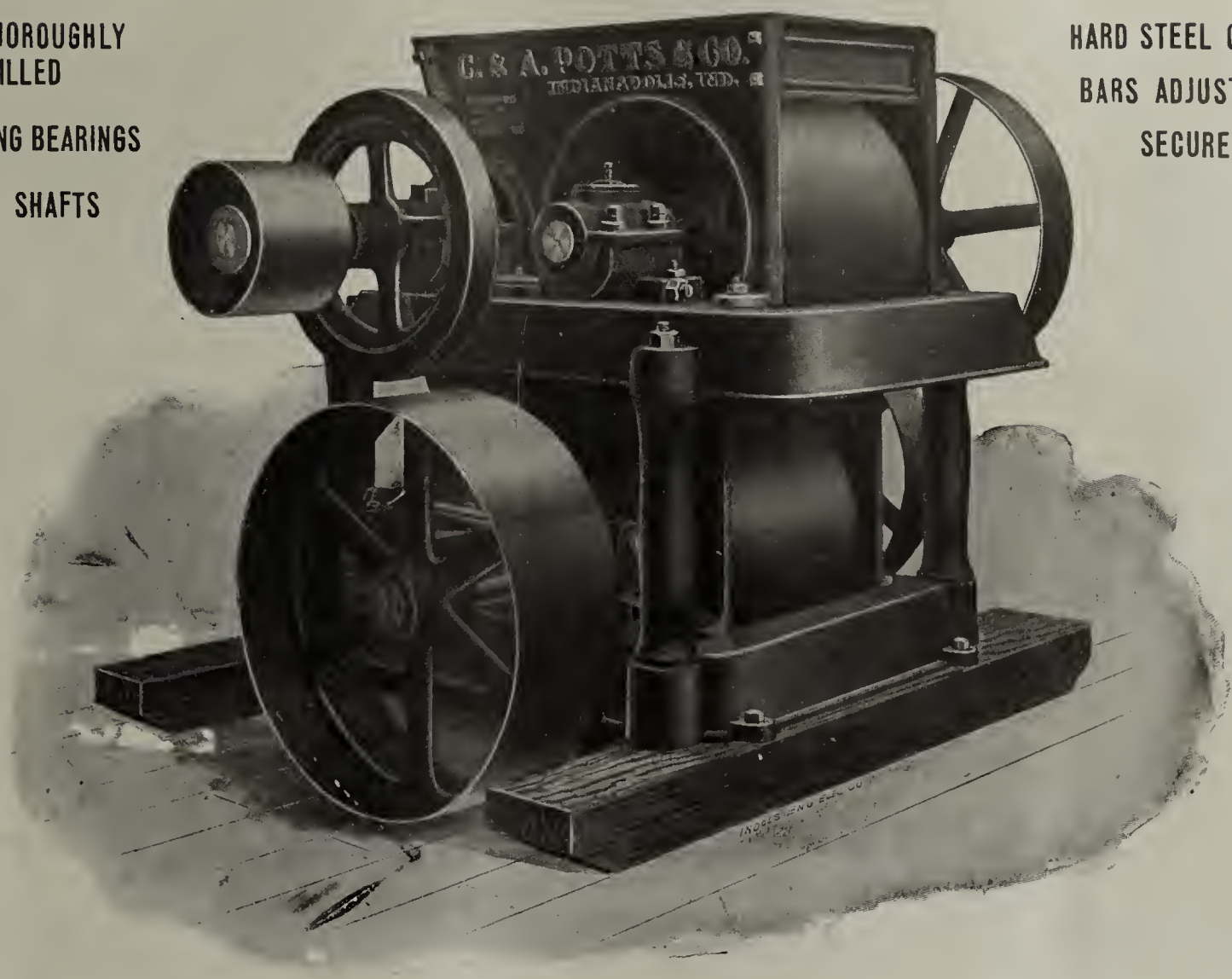

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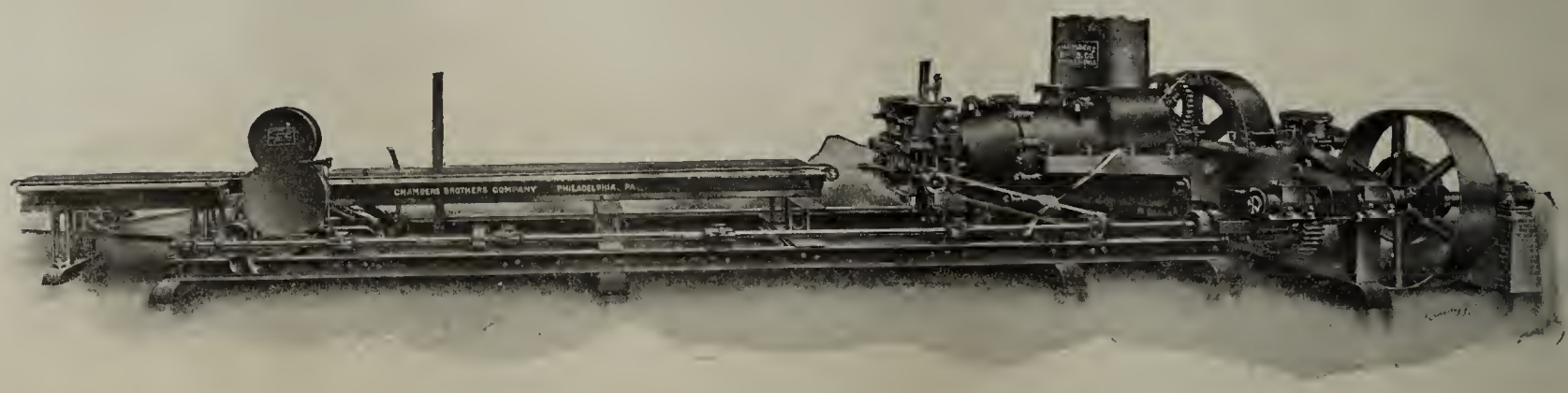

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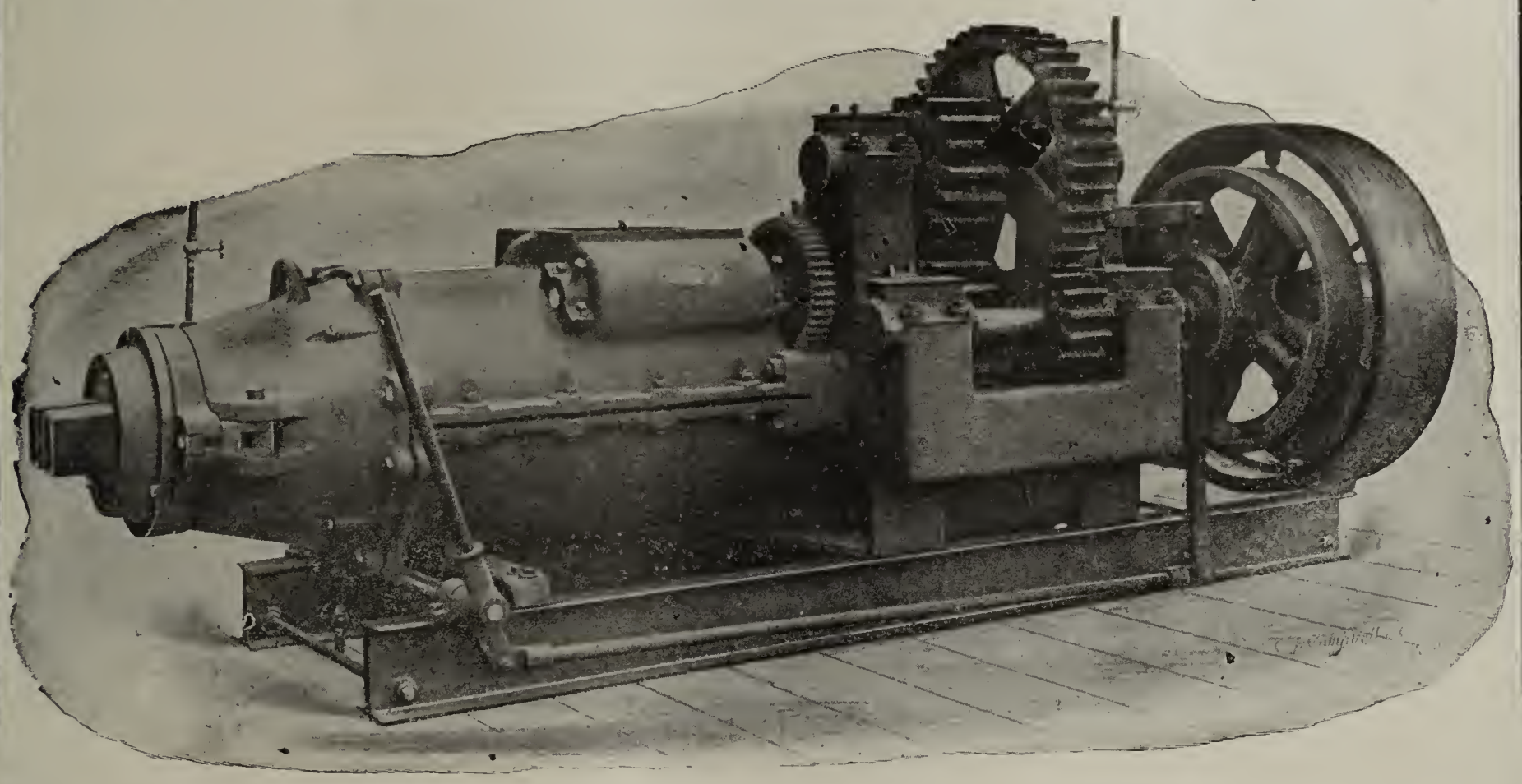

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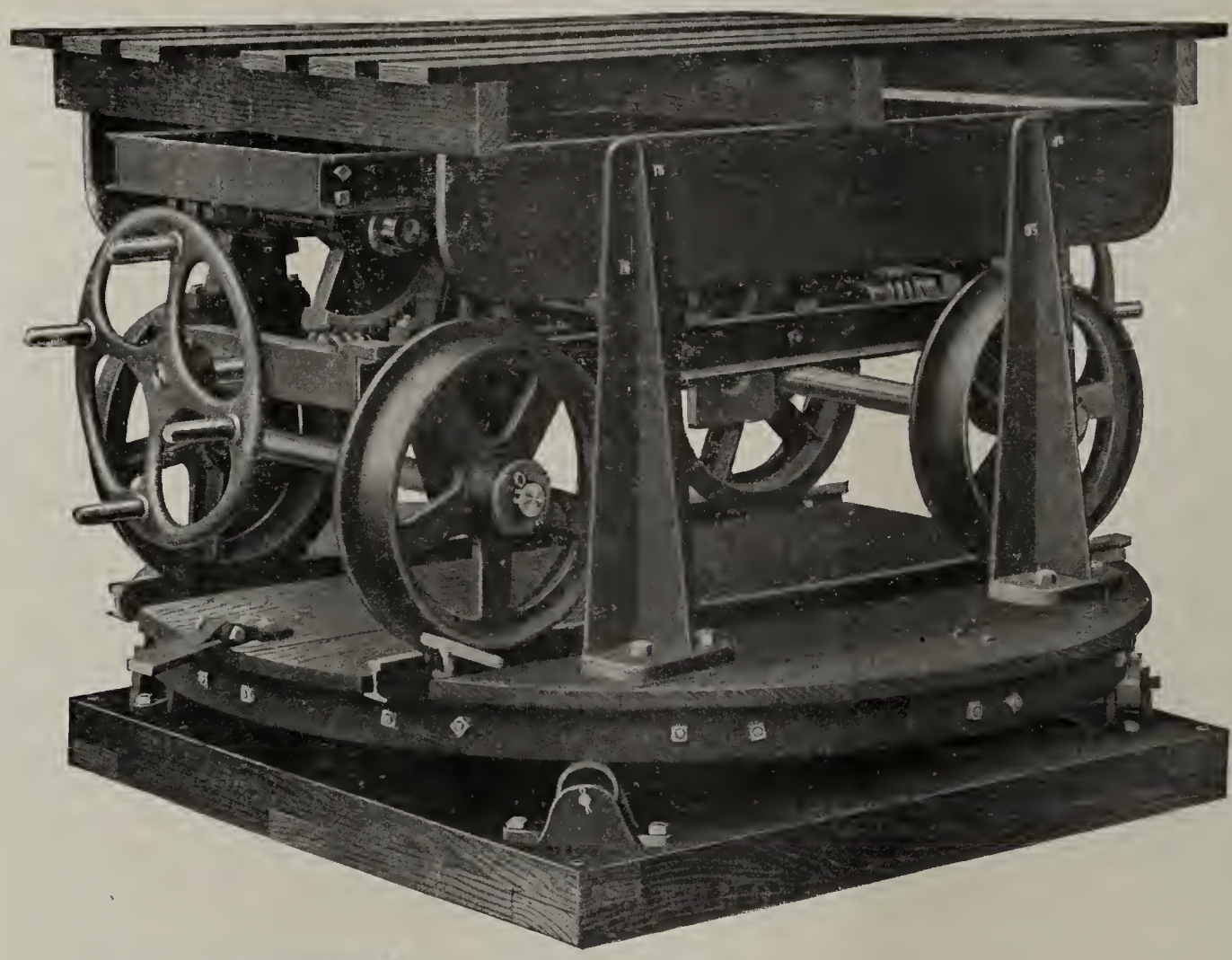

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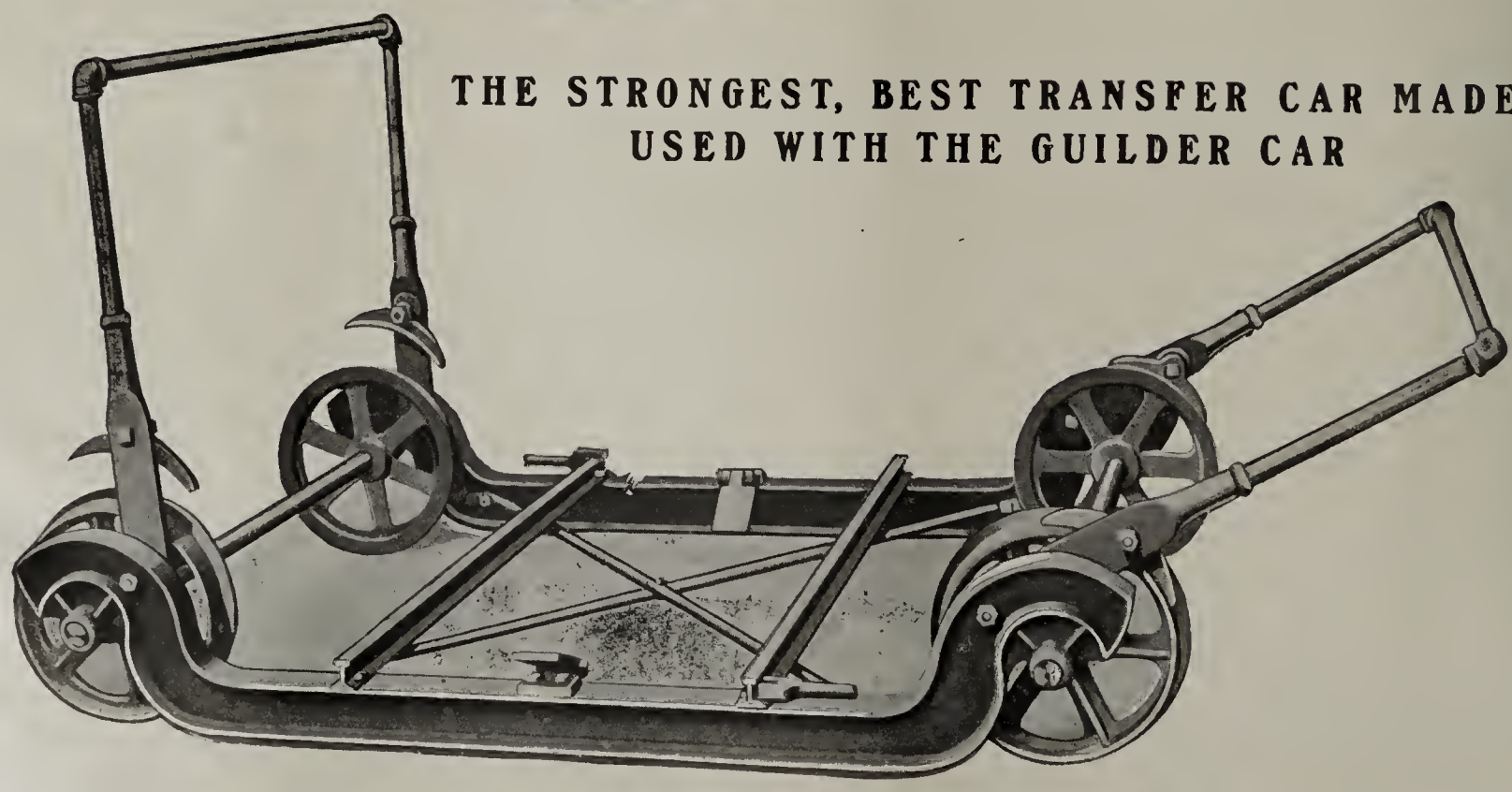

Write to the J. D. FATE CO., Plymouth, Ohio, about this system

CLAY RECORD

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THE HUMIDITY SYSTEM OF DRYING*

By E. D. Gates, Seattle, Wash.

The desire to find a method of drying architectural terra cotta more quickly, and at the same time more safely and more economically, led the writer toward this subject some eighteen months ago.

Ware which has been cracked in drying is seldom seen around an aggressive clay plant, unless a sudden rush of orders causes a shortening in the established period of drying, in which case you are all no doubt familiar with the sad results.

In the present quickening days of the clay industry we are forced to continually increase the output of our plants, and as few plants are so arranged that all departments have the same output, the result is that one or more of the departments are compelled to rush the product through their stage of production in order to keep pace with the remainder of the plant. You can probably recall having seen this occur many times in different plants.

In some cases this will be due to the limited kiln capacity, in others it may be the machine or shop, while in still others it may occur in the driers.

We all object to bringing our ware safely to the driers and then have to remove a good proportion of it with shovels—the loss is great. In the case of terra cotta the ware at the drier door represents about 53% of the total cost. If this is reduced to scrap the greater part is loss.

It so happened that the driers of our plant were too small to give the ware the slow drying it required, and with a sudden rush of work it became necessary for us to either increase the capacity of the coils which were already installed or to add to them. The latter was not practical at that time so another method had to be found.

Having always known that the pieces of terra cotta on the coils began to dry on the corners and projecting parts before the remainder of the piece was warm, unless these corners were covered with paper or sacking, and knowing that this resulted in unequal shrinkage with the attendant cracking and warping, started me on a train of thought which led to the following experiments and to this method of treatment.

It seemed to me that the proper method of procedure would be to heat up the whole piece of clay ware to the temperature reached in drying before any drying could commence. The hygroscopic moisture, or water mixed with clay, would then leave the whole piece of ware quite evenly and from all portions at once, thus making it shrink in all parts at the same time and at the same rate, doing away with cracking and warping and increasing the percentage of good ware.

It also appeared that if this could be done the capacity of the driers would be largely increased.

It was decided, after giving the matter careful thought, that the best, if not only manner of accomplishing this, would be by properly controlling the humidity of the air in the driers until the pieces had become heated and then allowing actual drying to commence.

As worked out for commercial purposes this would consist in introducing live steam into the driers, while the temperature was being raised, care being taken to keep the percentage of humidity so high that the air in the drier could not take up any of the moisture that the ware contained. The pieces of ware would therefore not be able to dry any until humidity was allowed to drop. This condition would be carefully avoided until the ware had reached the temperature of the drying chamber. This being accomplished, the injection of steam could be stopped and air allowed to pass through the steam coils and drier and carry off the water contained in the pieces. The live steam injected would aid in heating the drying chamber and so facilitate the operation. It appeared that this method would permit of holding our ware without the shrinking being allowed to start, until it was thoroughly heated to the temperature desired. Acting on this assumption, we equipped two driers as follows:

Each drier contained three coils of about 400 lineal feet of one-inch pipe each. Over each set of three coils we erected boxes, the boxes being equipped with sliding doors on the side for the purpose of loading and unloading the coils. Suitable openings were provided at the top and bottom for the inlet and outlet of air, these openings being arranged so that the amount of air could be controlled.

For jet pipes we used one-half inch steam pipe having a hole one-eighth inch in size every foot, and when installing these jet pipes we were careful to have all the holes in line. These jet pipes were first installed near the top of the boxes with the holes turned up. This was thought to be the proper place for them owing to that being the hottest part of the boxes and the air in that part being able to take up the greatest amount of moisture. This location of the jet pipes was subsequently changed and they were placed under the coils near the floor. The change being made to overcome the dripping of water upon the ware from the roof of the boxes, the steam condensing when it struck the comparatively cold roof surface. This last location was found to be much better as the pipes were not only out of the way

* Read at the last meeting of the American Ceramic Society, which was held at Rochester, N. Y.

but the steam could humidify the air as it passed up through the coils and becoming heated was hungry for more moisture than it contained on entering.

When first tried, over a year ago, the operation was carried on in the following manner.

The coils were loaded with green ware, the doors closed and the steam turned on the coils, gently at first. The hygrometer was then consulted and the humidity kept as near 90° as was possible. We found that oversaturation would occur in parts of the drier if the humidity was allowed to run much over 80°, so that was the percentage adopted in practice. The attention of the operator was required for a short time as the drying chambers raised in temperature, the admission of steam being increased as was necessary to hold the humidity near the allowed 80° and the steam on the coils being also increased.

In order that the heat of the coils could be accurately controlled we finally arranged each two-inch pipe feeding the coils, with a one-half inch pipe and valve for a bypass by the two-inch valve. This was found to be a good arrangement, as it allows the steam to be controlled so that only hot water can enter the coils when low heat is wanted, and at the same time the valves are not cut out by the steam as would be the case if they were only partly opened. In several hours, after the ware had become heated, it was our practice to decrease the amount of steam injected and open the upper and lower air holes and thus allow the drying to start. The steam jet being left on a little as a precautionary measure to avoid too rapid drying.

The necessity of crowding our driers having been overcome, the use of the system was discontinued for several reasons. Prominent among them was the fact that I had not been able to carry out the experiments necessary to a proper understanding of the best manner and the time required to get the maximum results from its use. These experiments would of necessity, have to be carried out on a small scale at first and the knowledge thus gained could then be applied to the operation of the large driers and a schedule worked up that would give the amount of steam allowed on the coils, the humidity per cent, the regulation of the valve controlling the jet and the length of time necessary for each stage of the process, as well as the amount of air to be admitted and passed through the driers after the heating up was accomplished.

All the information, in fact, that would enable any intelligent man to successfully carry the ware through the drying stage with safety and dispatch. The experiments given later were performed with this end in view and to also determine how the system would act with other classes of clay products to see if the method was adaptable to other lines besides architectural terra cotta.

The small drying chamber, for these experiments, was roughly built so as to make the conditions as similar as possible to those met in actual practice. It was three feet long by two feet wide and two feet high and had glass on the front and back to enable us to read the thermometers and properly observe the conditions and action of the piece of clay ware to be dried. The box was equipped with a steam coil consisting of 10 lineal feet of three quarter inch steam pipe and a jet pipe made of one-half inch pipe with one-eight inch holes. This jet pipe was laid on the bottom of the box under the steam coils and the holes turned downwards so that the steam would spread as much as possible before rising and passing up through the coil.

In some of the experiments a hygrometer was used in each end, while in others only one was used. However, in all of them a thermometer was imbedded deeply in the clay body so that its actual temperature could be known at all times.

The experiments run were as given below:

No. 1.—Piece of terra cotta, on its back or bond with slats running lengthwise; jet used.

No. 2.—Piece of terra cotta, on bond; slats crosswise; jet used.

No. 3.—Piece of terra cotta, on bond on a board having holes; using the jet.

No. 4.—Piece of terra cotta, on bond, on board without holes; using the jet.

No. 5.—Piece of terra cotta, on bond, on slats lengthwise; without using the jet.

No. 6.—Solid fireclay block, on slats lengthwise; using the jet.

No. 7.—Same as No. 6, but allowing more time to heat the block.

No. 8.—Shale body, about brick size, on slats lengthwise; using the jet.

No. 9.—Fireclay mixture containing grog, on slats; using the jet.

Also a cube of terra cotta body in the box at the same time.

The data kept consisted of the time of day, the time in minutes from the start, the temperatures of the wet bulb and the dry bulb thermometers, the per cent of humidity, the number of degrees Fahrenheit raised in each 15 minutes, the condition of the piece, the temperature of the piece as indicated by the thermometer imbedded in it, the shrinkage, the condition of the jet and any remarks. We also determined the water content of some of the pieces and care was used to see that all the samples of terra cotta contained approximately the same amount. They were all taken just after being removed from the mould and were quite wet.

The bodies experimented on were all such as required a good deal of care in drying. The large blocks were made of a body which is particularly difficult to bring through the drying without cracking. The results of the experiments and the manner of running them which follow are greatly condensed, only the important facts being given, so that the conclusion reached may be seen.

You will note that we succeeded in raising the temperature of brick about one degree every two minutes, on the average, while in most cases in the early part of the treatment we could raise it a degree a minute without cracking them.

Experiment No. 1; using the jet.

Piece of terra cotta, 1 foot, 6 inches long, 10 inches wide and 8 inches high, set on its hollow or bond side on slats running lengthwise and using the jet to control humidity. The piece was quite wet having been out of the mould only a short time.

Started at 10:30 A. M., and finished at 8 A. M., the next morning.

The temperature of the drying chamber at the start was 66° on both the wet and dry bulb thermometers. This temperature was raised to 112° in one hour and held there. The initial temperature of the piece was 62°, and it was raised to 48 degrees to 110° in one hour and forty minutes, the average raise being .48° per minute.

The clay body was dried, without cracking, in 19 hours and 45 minutes after turning the jet off, making a total time of 21 hours and thirty minutes to get a shrinkage of 9-16ths inch per foot. The piece was perfectly true in shape when dried.

Experiment No. 2; using the jet.

Piece of terra cotta, same in size as that used in No. 1, was placed on the bond on slats running crosswise. This piece was quite soft.

The chamber thermometers showed 74° on the wet bulb and 88° on the dry bulb at the start. This was raised to 124° in 2 hours and 15 minutes and held at that point. The thermometer in the body showed that it had an initial tem-

perature of 62°, which was raised 50 degrees to 112° in 2 hours and 15 minutes, the average raise being .37 degrees per minute.

The total shrinkage was 9-16th inch per foot but the piece was cracked through the center vertically, due it seems to the slats under the piece running across the direction of greatest shrinkage and the body not crawling as easily as it would if the slats were arranged as in the first experiment.

Experiment No. 3; using the jet.

Piece of terra cotta, same as in Nos. 1 and 2, and set on a regular board having one inch holes bored through it to allow the air and heat to get at the inside of the piece.

At the start the hygrometer registered 70° on the wet bulb and 90° on the dry bulb. This was raised to 125° in two hours and 15 minutes. The temperature of the body at the start was 62° and was raised 46 degrees to 108° in 3 hours and 5 minutes, an average raise of .24 degrees per minute.

The piece was dry in 22 hours and 45 minutes from the time of placing in the box and was perfectly true and was without cracks. The total shrinkage was 9-16ths inch to the foot.

Experiment No. 4; using the jet.

Piece of terra cotta, same size and shape as before, on bond on board without holes in it. The piece was therefore protected from the circulating air on the bottom side, and the ends and sides and the top were exposed.

The temperature of the box was 67° on the wet bulb and 84° on the dry bulb at the start. The dry bulb temperature was raised 119 degrees in 5 hours and held at that point. The temperature of the piece was 60° at the start, and was raised 31 degrees in 6 hours and 15 minutes to a temperature of 91°. The jet was then shut off and the steam coil kept on. In 23 hours and 30 minutes the temperature of the piece was 94° and the shrinkage one-half inch in one foot.

At the end of 30 hours from the time the piece was put in the drier it was thoroughly dry and had shrunk 9-16ths inch in one foot. The piece was in perfect condition as to cracks and trueness of lines.

Experiment No. 5.

This piece was dried without using the jet.

The piece of terra cotta was the same in size and shape as those used in the previous experiments and was placed on the bond on slats running lengthwise, the conditions being as near like those in Experiment No. 1 as could be obtained. The object being to illustrate the difference in the drying time under the two systems.

The hygrometer at the start registered 68° on the wet bulb and 84° on the dry bulb and the temperature was raised 108° in 7 hours and held at that point. In experiment No. 1 the box temperature was raised to 112° in one hour.

The initial temperature of the piece was 52°, this was raised to 114° in 23 hours and 30 minutes and the piece was fairly dry at that time. It was, however, cracked in five places and was unfit for use.

Experiment No. 6; using jet.

Piece of body which is very difficult to dry. Size, 17½ inches long, 10¼ inches high and 10¼ inches wide in a solid block of clay.

The temperature of the box was 65° on the wet bulb and 78° on the dry bulb at the start. This was raised to 112° in 3 hours from the time of starting.

The piece was 42° at the start and was raised 44 degrees to 86° in 5 hours and 45 minutes, an average raise of 127 degrees per minute. At this point the jet was shut off and air allowed to pass through the drier and at the end of 19 hours the piece had risen to 92°. Badly cracked, so the following experiment was tried.

Experiment No. 7; using the jet. Same size and kind of piece as that in preceding experiment.

The box at the start was 51° on the wet bulb and 60° on the dry bulb and the temperature was raised to 164° in 7 hours and 15 minutes.

The piece was raised from 36° at the start, to 117° in 9 hours. The raise being 81 degrees or an average of .15 degree per minute. The piece at this time had begun to show cracks which must have been due to expansion as there has been no shrinkage in the body. The jet was then shut nearly off and the temperature kept on until a total time of 26 hours has passed. At the end of this time this piece had shrunk 9-16ths inch in one foot and was badly cracked.

Experiment No. 8; using jet.

The body tried was a very stiff shale body, 6 inches by 4 inches by 3 inches in size.

The box at the start showed 76° on the wet bulb and 87° on the dry bulb and the temperature was raised to 146° in 2 hours and 15 minutes.

The piece was 53° in temperature at the start and this was raised 67 degrees to 120° in 2 hours and 15 minutes, the average raise being nearly .5 degree per minute.

The temperature of the piece had dropped to 104° in 18 hours and 30 minutes and it was dry, with a shrinkage of ⅜ inch to one foot.

The piece showed some fine cracks in the top.

A solid block of the terra cotta body, about 6 inches by 6 inches by 6 inches in size was put in the drying chamber with the shale body but no temperature readings were kept of it. At the end of the 18½ hours it was dry and in good condition.

Experiment No. 9; using jet.

This body was a fire clay mixture containing 20 % grog, and was a brick in size.

The chamber temperature was 82° on the wet bulb and 106° on the dry bulb at the start; it was raised to 148° in one hour.

The temperature of the brick was 60° at the start and it was raised 60 degrees to 120° in 1 hour and 15 minutes without shrinkage. The jet was then shut completely off and the piece allowed to dry. At the end of 6 hours and 45 minutes it was down to 108° and had shrunk 3-16ths inch in 6 inches or ⅜ inch to one foot. It was nearly dry and had not been cracked.

The conclusions drawn from these experiments and from the use of this method in the large driers, are as follows:

(a) That a clay body can be heated up more quickly and safely in the presence of high humidity than is possible when low humidity is kept.

This is shown clearly by a comparison of Nos. 1 and 5.

(b) That a clay body can be raised to a higher temperature in high humidity atmosphere than in low humidity.

(c) That actual drying will start sooner if the piece has been preheated.

(d) That the time of drying can be shortened considerably by this method.

No. 1 was dried in 21½ hours, by using the jet, and without cracking the piece, while No. 5 was given 2 hours more, without jet, and was badly cracked.

(e) That drying can be controlled and started or stopped at any temperature by regulating the humidity of the air in the drying chamber.

(f) These experiments also show that some bodies will expand and crack from that cause if heated too rapidly. The clay in question will crack on the brick cars before being run into the tunnels.

It also appears that the body is more quickly, safely and easily heated if the water content is large than will be the case if the clay is rather stiff. This also aids in shortening the time of production.

THE SAND-LIME BRICK CONVENTION AT BUFFALO

The sixth annual convention of the National Association of Manufacturers of Sand-Lime Products was held in the Hotel Statler at Buffalo, New York, December 6th and 7th, with thirty-four representatives of the industry in attendance. So far as numbers were concerned it was no better than previous meetings but the personnel was representative of the industry from all parts of America, including Canada.

The entire membership are alert to the possibilities now before the organization, with the accumulated information, materials and records of co-operative effort in the work of the association in the past.

President S. O. Goho of Waltonville, Pennsylvania, sounded the keynote in his annual address and each suggestion was worked out by committees and adopted into the future policy of the association.

PRESIDENT GOHO'S ANNUAL ADDRESS

The manufacturers of sand-lime products have every reason to congratulate themselves upon the prosperous condition of the industry in which they are engaged.

The product of our plants is better than ever before and there is a rapidly growing appreciation of the merits of the product on the part of the architects and builders.

Intrinsic merit and good business management have been important factors in bringing success, but neither of these could have availed in the face of an unfavorable rating upon sand-lime brick, and it was this association that made the fight against such unfavorable rating and won out.

When this association was called together for the first time for mutual advice and encouragement, there was no clearly expressed purpose of forming a permanent body. From this fact has arisen some weakness that should be corrected at this time.

The constitution and by-laws should be carefully gone over, with a view to revision, or possibly to the making of new ones, and your president suggests that a committee be appointed for this purpose, asking them to report at the business meeting tomorrow morning.

The only expenses which the association in the beginning expected were those incident to the conduct of the office of secretary and those arising from the publication of the annual report of proceedings, and financial provisions were made accordingly.

A little more than two years ago, unexpectedly, an unfavorable insurance rating was made upon sand-lime brick. Had that rating been permitted to stand, it would eventually have closed every sand-lime plant in this country, and had a most disastrous reaction upon the plants in the Dominion of Canada.

This association took up the matter with the National Board of Fire Underwriters. Meetings were had with their representatives, tests were suggested, and finally made in the laboratories of the Fire Underwriters by the Underwriters and your committee, with Drs. Woolson and Lazelle as advisory. The result of the tests was a vindication of our products. Considering the magnitude of the interests involved, the cost of this work was trifling. None the less, it was far beyond the resources of this association. Common honesty and good business sense dictated that these bills should be met as promptly as possible.

With the exception of bills owing members of this association for expenses in attending the meetings with the representatives of the Board of Fire Underwriters, and the salary due the secretary, we are out of debt. In the meantime we have not been able to publish our report of proceedings, and this may have cost us some memberships. Your president suggests that a committee be appointed to report tomorrow morning upon our finances, the outstanding bills, and at the same time upon the ways and means, if such there be, for publishing the proceedings of the meetings at Columbus, Washington and Buffalo. It should be proper for this committee to take up and report upon any phase of these questions that may seem advisable. Should the reports of these years be published separately or as a single volume? Should the reports be published verbatim or with repeated matter eliminated? When published should their circulation be limited to the membership of this body? If publication in full be impracticable at this time, are we in position to publish as bulletins articles of technical value? This question of how far we shall extend the benefits of this association to those outside leads me to speak of certain changes that your executive committee has seen it wise to make at this meeting. Registration consists as much in paying dues as in any other one feature. There nas been trouble in the past because the association never knew what it had to use in keeping house.

With the fees collected before debts are incurred we know just what we dare spend to prevent a deficit. Those who are not members of this association, as shown by the books of the treasurer, are not to have the privileges of this floor. Those of you who are familiar with the trade associations in other lines know that their meetings are invariably in executive session.

This is not wholly nor even largely for financial reasons. It is right and proper that we should know exactly what we have to rely upon in our treasury. The only way to bring this about is to insist upon the payment of dues previous to admission to our meetings.

Beyond this, if you will look over the proceedings of the meetings held in other years, you will find that a great deal of the time of this association was taken up by persons who asked information of every sort, persons who took the floor repeatedly, but persons whose names do not figure on the books of the treasurer. An additional reason is to be found in the nature of our discussions. The perfect building material has not yet been found. At our sittings we have been very frank in talking about the difficulties we have met. weaknesses that have developed and how to remedy them, the cost of production and selling prices, and a variety of other things best discussed in executive session, that garbled and distorted versions of our statements may not be used to our disadvantage.

Our meetings are valuable, our time is valuable, the results of our experience are valuable, and those who want to share in the benefits of this body should be ready to step up and see the secretary and treasurer in an official way.

Your president suggests that a fifth member should be added to the executive committee, who shall represent our Canadian membership and do what he can to bring all of the sand-lime plants in the Dominion into affiliation with us.

John L. Jackson of Saginaw, Michigan, read a paper on "What the Association has Accomplished for the Tangible Use of its Members." The paper was carefully prepared and gave in brief the labors and achievements of the organization in the past. The improvements in the process of manufacture that the association had worked out, the improvement in the machinery and the great improvement in the product of the plants when the owners had identified themselves with the association, and the standardization of the product which makes it more valuable for the association and builder.

J. S. Palmer, Sebewaing, Michigan, read a paper on "What the Association May Do for the Industry it Represents." He suggested among other things, the appointment of a publicity and promotion committee which was adopted and he was elected chairman.

The "Essential of Success in the Manufacture of Sand-Lime Brick," was very ably handled by W. H. Crume of

Dayton, Ohio. The paper was devoted to the practical workings of the establishment and the organization of the economics which make it possible to manufacture sand-lime brick with profits to the manufacturer.

W. E. Plummer, Jr., of Buffalo, New York, read a paper on "One of the Successful Ways of Preparing Coarse Material." He described a wet pan grinder system which had given great satisfaction and which was so interesting to the manufacturers that they were invited to visit the plant at Lancaster, a short distance from Buffalo, and personally inspect the machine in operation.

"The Future of this Association," by H. O. Duerr of Wilmington, Delaware, outlined a working policy for the association. He was a former president and secretary of the association and knows the requirements as well as any member in it, and one of the first in this country to manufacture sand-lime brick.

The report of the secretary showed that the membership had been well kept up and that the only disturbing factor was the lack of published information of the workings of the association.

The report of the treasurer showed a balance in the treasury after all the debts of the association had been settled including the technical services and for the comparative tests, etc.

The committee on constitution and by-laws consists of H. B. Skeele, Savannah, Georgia; E. P. Bacon, Bridgeport, New Jersey; and F. K. Irvine, Chicago, Illinois. The report was presented by Mr. Skeele. It recommended the change of name of the association to the American Association of Manufacturers of Sand-Lime Products, with the explanation that this was necessary in order to give the Canadian members actual recognition in the name of the body.

As per the president's suggestion the admission fee of the association was raised from $10.00 to $25.00 and the annual dues were raised from $10.00 to $15.00. These changes were explained in the first instance as being equitable to the faithful membership who have steadily contributed to the expensive technical research and to costly committee services, and in the matter of dues it was found in view of the fact that the membership desired to have reports of conventions and meetings published together with bulletins and official circulars from time to time, that the additional dues would be necessary to cover the expenses. A provision was inserted to provide for the removal of such members who might refuse to co-operate with the work of the association, or use every reasonable endeavor to keep their product in line with the standard specifications which have been adopted by the association for the product when made by the members of the association. It was explained that these specifications were easily within the reach of any manufacturer who is determined to live up to the ideals of the association. This entire report was unanimously adopted and becomes incorporated as a part of the constitution of the association to more fully describe its policy in the future.

The committee on ways and means composed of Messrs. W. K. Squier, Syracuse, New York; John L. Jackson, Saginaw, Michigan; and Anton Berg, Toronto, Ontario, provided for the payment of current bills, and also for the publication of abridged reports of the three conventions of the association which have up to this time remained unpublished, and for such other financial matters as the work of the association demands.

An auditing committee consisting of L. W. Penfield, Willoughby; O. W. Godart, Minneapolis; and John E. Ericson, Waltonsville, Pennsylvania, adjusted the accounts of the secretary and treasurer and reported that they were correct.

Two standing committees were appointed. A committee on promotion and publicity, consisting of J. S. Palmer, Sebewaing, Michigan; F. K. Irvine, Chicago, Illinois; H. O. Duerr, Wilmington, Delaware; and John L. Jackson, Saginaw, Michigan. This committee, with the co-operation of the members of the association, will furnish matter to trade journals during the coming year. They will consider and review matters relating to the promotion of the interest in sand-lime products with architects and builders directly within the shipping limits of the plants now operated by members of the association and to the general public as well. This important committee is made up of workers and they will doubtless in the coming year produce many things of interest and profit to the makers of sand-lime brick.

The committee on standardization, consisting of district executives, is as follows: Messrs. E. M. Loewenthal, Rockaway, New York; H. B. Skeele, Savannah, Georgia; L. W. Penfield, Willoughby, Ohio; W. Godart, Minneapolis, Minnesota; and F. B. Allan, Toronto, Ontario. The duty of this committee will be to examine the products and assist the various members of the association in securing and maintaining the standard specifications in the product that they turn out. With this committee every member of the association will be intimately connected for the reason that every member who is not now making standard brick will be expected to do so, by the time of the next annual convention.

The following officers were elected for the year:

President, S. O. Goho, Harrisburg, Pennsylvania; vice-president, Wm. D. Schultz, Brantford, Ontario; secretary, F. K. Irvine, Chicago, Illinois; treasurer, W. E. Plummer, Jr., Buffalo, New York; executive committee: eastern district, E. M. Loewenthal, Rockaway, New Jersey; southern district, H. B. Skeele, Savannah, Georgia; central district, L. W. Penfield, Willoughby, Ohio; western district, Walter Godart, Minneapolis, Minnesota; Canadian district, F. B. Allan, Toronto, Ontario.

The members in attendance were: S. O. Goho, Allen G. Walton, R. J. Walton, Jr., and John E. Ericson, Hummerstown Brownstone Company, Waltonville, Pennsylvania; J. S. Palmer, Sebewaing Sandstone Brick Company, Sebewaing, Michigan; Raleigh W. Holden, Rochester Composite Brick Company, Rochester, New York; John L. Jackson, Saginaw Sandstone Brick Company, Saginaw, Michigan; W. H. Crume, Crume Brick Company, Dayton, Ohio; E. M. Loewenthal, Rockaway Brick Company, Rockaway, New Jersey; E. P. Bacon, Penbryn Brick Company, Bridgeton, New Jersey; Oscar Gross, Sioux Falls Pressed Brick Company, Sioux Falls, South Dakota; F. B. Allen and J. O. Mercier, Toronto Indestructible Brick Company, Toronto, Ontario; Walter Godart, Belt Line Brick Company, Minneapolis, Minnesota; John Heimlech, LeRoy Lime Works, LeRoy, New York; W. J. Carmichael and L. W. Penfield, American Clay Machinery Company, Willoughby, Ohio; W. R. Strong, Montana Granite Brick Company, Helena, Montana; Anton Berg, The Berg Machinery Manufacturing Company, Limited, Toronto, Ontario; R. F. Kremheder, W. E. Plummer and F. Harsenlopp, Buffalo Sandstone Brick Company, Buffalo, New York; H. O. Duerr, Wawasset Stone Company, Wilmington, Delaware; W. K. Squier, The Paragon Plaster Company, Syracuse, New York; H. B. Skeele, Savannah Brick Works, Savannah, Georgia; S. G. Marling, Silica Brick & Lime Company, Limited, Victoria, British Columbia; H. C. Shields, Lehigh Car Wheel & Axle Company, Catasaqua, Pennsylvania; G. W. Mitman, C. K. Williams & Company, Easton, Pennsylvania; W. D. Schultz, Schultz Brothers, Brantford, Ontario; Louis Buchheit, Mitchell Lime Company, Mitchell, Indiana; Albert T. Leach and H. D. de Jonannis, Chicago; F. K. Irvine, secretary, Chicago; E. M. Updike, reporter, Chicago.

A HOUSE OF BRICK

Experience has shown that however meritorious an article may be the public must be constantly reminded of that merit or they forget and give their patronage to the article which is brought most frequently to their attention. This is not only sound business logic but it is based on the very foundations of human nature. You must recognize its truth.

They must be told—reminded again and again.

When they have been told, every brickmaker will get more business.

Because a larger proportion of new buildings will be built of brick.

The surest way to get attention—to arouse interest in brick—is to show people how to use brick. That means de-

COMPETITION FOR THE BRICK HOUSE

People have an idea that wood is cheap.

They think that brick is expensive.

Both of these ideas are wrong.

They do not realize that brick is the most perfect building material in the world and that, in the long run, it is also the most economical.

signs, plans, suggestions.

Following these well known principles, your executive committee offered through *The Brick Builder* cash prizes amounting to $1,000 for the best designs, submitted in competition, of a brick house to cost $10,000. This seemed to be the best all around plan with which to commence the practical

work of this association. The amount offered in prizes was large enough to command the attention of architects, while the limit set for the cost of the house was modest enough to interest thousands of prospective home-builders.

As a result of the competition, 145 sets of drawings were received (each set consisting of two large sheets, showing plans, elevations, perspectives, details, etc.) from representatives of the best known architectural firms of the country.

If we did nothing more this year, that alone, would justify our existence.

The Association now has in its possession the finest set of designs for brick houses, ranging in cost from $10,000 to $12,000 and up, that has ever been assembled—designs which could not have been obtained by ordinary methods for twenty times what they have cost.

The competition was judged and the prizes awarded by a group of architects whose reputation is national, and who gave of their time and talents without remuneration. The services they rendered set the seal of high standing and real value upon the whole program, showing anew the class which lend aid and support to this movement if the brickmakers will only help themselves in the battle for the supremacy of brick.

What shall be done with the fruits of this splendid competition? Having secured the best means for awakening the people to the desirability of brick construction, shall we allow these designs to lie idle? Or shall they be put before the people where they will bring a great harvest to the brickmakers? There is only one answer to such a question—the designs must be published.

But your committee needs money. To publish the first edition of 3,000 copies will require (including the cost of plates, which can be used for subsequent editions) at least $1,000; we have on hand less than $700.

We appeal therefore:

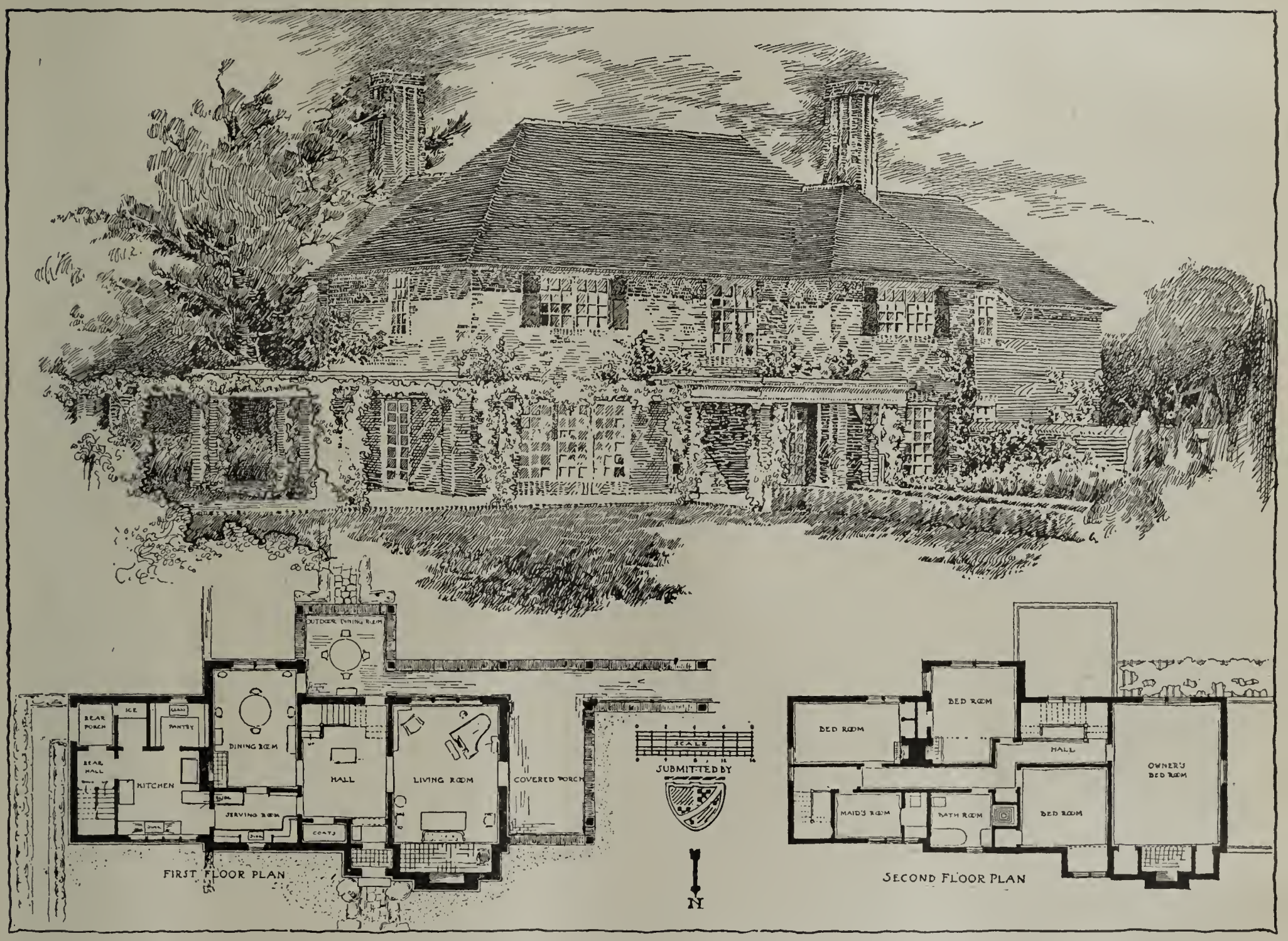
To members who for various reasons have not paid up—Please pay now.

To those who have lagged behind through lack of confidence in the project—Join the association now and send your check to cover dues.

To every brickmaker and brick-dealer—Send your check at once for as many copies of the new book *A House of Brick* as you can distribute to your trade.

The price of the book has been set at 50 cents per copy (so stated in the book). A special net price of 25 cents per copy will be made to paid-up members of the Association. The book will be ready for distribution about January 10, 1910. You can sell this book or give it away as you see fit.

The book will be about 9 by 12 inches and will contain 72 pages, 52 of which will be devoted to the presentation of plans and pictures of beautiful brick houses.



PLANS AND PROSPECTIVE OF REAR OF HOUSE FROM THE GARDEN

Articles by well-known architectural writers will give power, dignity and value to the whole work. A special chapter by a competent authority will fully discuss the relative costs of wood, concrete and brick constructions, and will show the economy and superiority of brick.

Here is a work which will be sought after by every home-builder in your territory. It will increase your sales because the designs are compelling in their beauty and show effects that no other material can produce. The points of desirability, cost, etc., etc., will be equally convincing to builders of factories, business blocks, apartments, etc.

For every face brick it sells it will sell three common brick. There is no brickmaker, however prominent or however obscure, who cannot use this book to help build up his business.

We solicit your co-operation in a work which is meant to help you. We need your order for *A House of Brick*. You should join this Association at once if you desire to do for your business the maximum of good at a minimum of cost.

The architects have been aroused. For a small sum you can possess the weapon to wake up the public.

Please send in your orders promptly.

CLAY PRODUCTS ASS'N OF AMERICA.
Per Executive Committee.

Room 1614, Flatiron Bldg., New York, N. Y., December 10, 1909.

REPORT ON THE GROWTH OF GAS-PRODUCER POWER PLANTS

By the United States Geological Survey

More than 500 producer-gas power plants, ranging in size from 15 to 6,000 horsepower, are now in operation in the United States. About 88 per cent of these plants are running on anthracite coal, a few on anthracite or coke, and the remainder on bituminous coal and lignite. In a bulletin on the recent development of the gas-producer power plant in the United States (Bulletin 416), just issued by the United States Geological Survey, R. H. Fernald, consulting engineer, states that the internal-combustion engine has already become a serious rival of the steam engine in many of its applications, and that the development of the large gas engine within the last few years has been extremely rapid. Only nine years ago a 600-horsepower engine exhibited at the Paris Exposition was regarded as a wonder, but today four-cycle, twin-tandem, double-acting engines of 2,000 to 3,500 horsepower can be found in nearly all well-equipped steel plants, and some plants in this country contain several units rated at 5,400 horsepower each.

RAPID DEVELOPMENT OF THE GAS ENGINE

This rapid advancement of the large gas engine was made possible by improvements in the production of cheap gas directly from fuel by means of the gas producer. A few scattered producer-gas plants were installed for power production in the United States before 1900, but the application of engines of this type to the production of power in any general sense has been developed since that date. During the first few years of this period of development anthracite coal, coke and charcoal were used almost exclusively. It remained for the United States Geological Survey, in its testing plants at St. Louis and Norfolk, to demonstrate the possibility of using in such plants practically all grades of fuel of any commercial value, without reference to the amount of sulphur or tarry matter they contain.

TESTS MADE BY THE GEOLOGICAL SURVEY

The tests made by the Survey, 168 in all, included 138 on bituminous coals, 9 on subbituminous coals, 10 on lignite, and 11 on miscellaneous fuel. The average consumption of fuel for a brake-horsepower hour was 1.36 pounds of bituminous coal, or 1.99 pounds of lignitic coal, the minimum consumption being 0.84 pound and 1.48 pounds, respectively. Comparative tests of 75 bituminous coals under a water-tube boiler and in the gas producer showed that the average fuel consumption per brake-horsepower in the steam plant was 2.7 times that in the producer plant. Several low-grade coals and lignites that were of little value, or even worthless, under the steam boiler gave excellent results in the producer. Other low-grade fuels—such as roof slabs, culm, and washery refuse, and even a bone coal that contained 44 per cent of ash—have been used to advantage in the producer under proper commercial conditions.

PRESENT STATUS OF PRODUCER-GAS PLANTS

Professor Fernald solicited the views of the principal manufacturers of gas producers on the present status of the gas producer as a source of power, with particular reference to the special conditions that oppose or make for its introduction. In addition, he or his assistant, C. D. Smith, personally visited 69 different plants that furnish power for a great variety of purposes, to determine the economy and reliability of the plants under average conditions. After this inspection Professor Fernald decided:

(1) That the plants as a whole are giving remarkable satisfaction in view of the brief period of development.

(2) That the most serious difficulty seems to arise from the lack of competent operators to run the plants, though there are many more competent operators today than three years ago.

(3) That the situation regarding misrepresentations and misunderstandings resulting from incompetent salesmen has with the stronger companies greatly improved.

(4) That the situation regarding trouble due to manufacturers neglecting plants that have been installed and paid for has changed decidedly for the better within the last few years.

The bulletin, which contains charts showing the growth of producer-gas plants and the location of the plants now in operation, may be had free of cost by applying to the Director, United States Geological Survey, Washington, D. C.

PRELIMINARY PROGRAM WISCONSIN CLAY MANUFACTURERS ASSOCIATION

The tenth annual meeting of the Wisconsin Clay Manufacturers Association will be held in Milwaukee, February 23rd, 24th and 25th. Headquarters at the St. Charles Hotel.

The following is the preliminary program:

1.—The Wisconsin Market for Brick and Clay Products.

2.—The Function of Lime in Clays. (Illustrated.)

3.—The Combustion of Fuel and the Application of Heat in Kilns.

4.—The Strength of Clay Products. (Illustrated.)

5.—The Great Importance of Tile Drainage in Wisconsin.

6.—Railway Rates and their Influence on the Clay Industries of Wisconsin.

7.—Some Factors Determining the Manufacture of Brick by the Soft-Mud Process.

8.—The Manufacture of Brick and Tile by the Stiff-Mud Process.

9.—The Need of Mutual Fire Insurance among the Brick Manufacturers.

10.—Publicity and the Clay Industries.

11.—Benefits of the State Association.

NEW CERAMICS BUILDING AT UNIVERSITY OF ILLINOIS

On November 22d, ground was broken for a Ceramics building at the University of Illinois.

Although the school has been in operation for four years, it has never had a home, but has been compelled to do its work in basement rooms of the Natural History, Law, and Chemistry buildings. These rooms, besides being poorly lighted, and scattered over a space equal to two city blocks, were not large enough to afford reasonable accommodations for more than thirty students, and, consequently, those in charge of the work have made no effort to secure a larger attendance for the last two years. If the department had been properly house, the present enrollment could easily have been doubled.

In 1907, and again in 1909, an appropriation for a suitable building was asked of the legislature, but both requests were denied. However, as the appropriation of 1909 added ten thousand dollars to the maintenance fund, after consultation with the authorities of the University and the members of the Advisory Board of Clay Workers, it seemed best to devote this sum to starting a building. The most feasible plan seemed to be to erect the rear part (kitchen, etc.) of the proposed building, as, in that case, but little money would have to be expended for architectural effect.

In pursuance of this idea, plans were prepared, the contract let, and work begun November 22d, as stated above.

The building, as planned, is a fire resistent brick structure, two stories and basement, with stone trimmings and slate roof. It has a floor area of 6,500 square feet, and will, for the present, be divided, in part by temporary partitions, into a machine room, 18 by 29 feet; a rough grinding room, 17 by 29 feet; a general laboratory, 36 by 29 feet; a plaster room, 18 by 20 feet; a pottery room, 20 by 23 feet; a drafting room, 18 by 29 feet; a library, 18 by 23 feet; a chemical laboratory for research work; two recitation rooms, and two offices; besides toilet, store, and locker rooms, and will be supplied with water, gas, electric currents of high and low voltage, high pressure steam, compressed air and vacuum. In addition to this, the kiln house, which is adjacent to this building, has two large coke fired kilns, one oil kiln, and two high temperature gas kilns.

It would have been impossible to erect so large a structure and one so well adapted to its uses for the sum named, had not the University authorities dealth generously by the department in assigning a favorable location where cost of construction will be reasonably low, and in supplying many small items, which aggregate a considerable sum, without cost to the department.

This building will afford reasonable accommodation for forty to fifty students and the various rooms will be supplied with the apparatus necessary for effective work in all lines now covered by the school.

It is expected that this building will be ready for occupancy early in the second semester, and its completion will mark the beginning of a new era in ceramic education in Illinois. The next legislature will probably be asked for a sum sufficient to complete the proposed structure, of which the present building forms only the rear portion. The completion of the entire building will enable the department to add lines of work which it has not been able to touch thus far and these additions will make it the broadest and best equipped institution of its kind in the United States. The return of Professor A. V. Bleininger, who is under appointment to take up the work July 1st next, assures the high quality of everything undertaken by the department.

We look forward with confidence to the time when the Department of Ceramics at the University shall prove as helpful to the clay workers of Illinois as the College of Agriculture has proved to its farming interests.

THE PRELIMINARY PROGRAM OF ILLINOIS CLAY MANUFACTURERS ASSOCIATION'S MEETING

The thirty-second annual convention of the Illinois Clay Manufacturers' Association will be held at the Elks' Hall at Champaign, January 18th, 19th and 20th, with headquarters at Beardsley Hotel.

The subjects that will be up for discussion and papers to be read, are:

1.—Relation of Face Brick to the City Beautiful.

2.—Facts and Fancies Dealing with the Clay Industry.

3.—Report of the Publicity Committee.

4.—The Progress Being Made by the Ceramic Department of the University of Illinois.

5.—What does it Cost to Work Impure and Non-homogeneous Clays.

6.—The Influence of Paving Brick Manufactures upon Use of Product in Relation to the Public.

7.—Producer Gas and the Continuous Kiln.

8.—Which Pays Best in the Manufacture of Drain Tile, Quality or Quantity?

9.—The Origin and Use of Coal.

10.—A Lubricating Die for Hollow Ware.

11.—A Modern Trade School for Building Trade.

12.—The New State Labor Law which Provides for Health and Safety of Employes of Factories.

13.—What Side Line should Clay Manufacturers Make?

14.—Labor Saving Machinery for the Handling of Brick by the Cook County Yards.

15.—Is it More Profitable to Make Hollow Fireproofing Ware than Common Clay Goods?

16.—How to Take the Lime Pebbles from the Clay for Making Tile.

17.—How to Handle the Different Stratas of Clay to get the Best Results in Making Tile or Brick.

These subjects will all be handled by those experienced in the respective lines. Professors Bleininger, Stull and Knote will be in attendance so as to direct us upon any subject.

The banquet will be the evening of the 19th, Wednesday, and will be given at the Beardsley Hotel. The best ever. Come and not only come yourself, but bring along the other clay manufacturers from your section of the county.

Clay manufacturers are invited from all the adjoining states.

There will be an exhibit room as usual, with plenty of space to display your ware.

Following the meeting the Illinois Clayworkers Institute will meet at the University of Illinois, Thursday afternoon and Friday morning. A splendid program has been arranged by them.

GEO. H. HARTWELL,
Secretary.

Chicago, Illinois.

BOILER EXPLODES KILLING TWO MEN

David Hinds and Daniel Abraham were instantly killed and eight other men narrowly escaped death when a boiler at the plant of the Robinson Clay Product Company exploded near New Philadelphia, Ohio.

Chief Fireman John Dolan was blown out of the building, but escaped without a scratch. Seven other men escaped with bruises. The boiler and engine rooms were wrecked. Three hundred and fifty men are thrown out of employment.

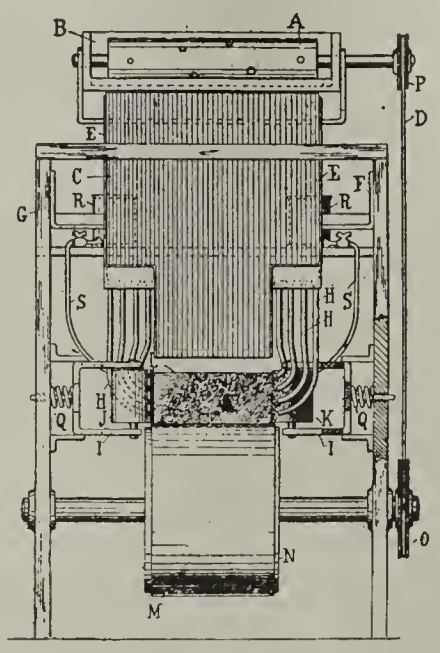
The boiler recently had been inspected. No cause for the explosion is known.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER.

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

937,706. Machine for Speckling Bricks. John D. Martin, New Straitsville, Ohio, assignor to The Straitsville Impervious Brick Co., New Straitsville, Ohio, a corporation of Arizona. Filed April 24, 1908. Serial No. 428,926.

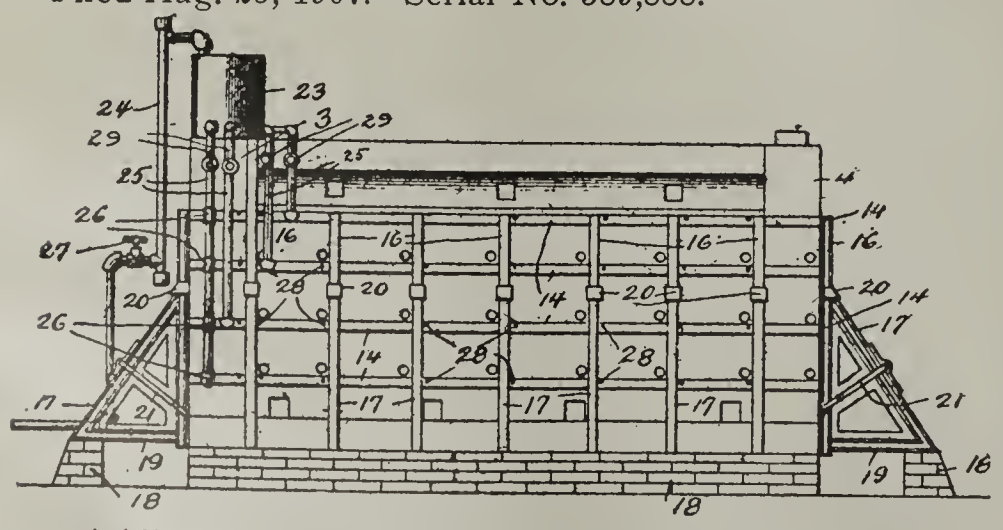
In a machine for speckling brick, the combination of a feed for speckling matter, a support for a horizontally moving clay column constructed to move therewith,



means whereby the feed for the speckling matter is operated by the support to deliver proportionately to the movement of the support, and means for embedding the speckling matter into the clay column, substantially as described.

In a machine for speckling brick, the combination of a feed for speckling matter, a supporting belt for a horizontally moving clay column constructed to move therewith, a roller for applying liquid to a vertical face of the clay column, means whereby the feed for speckling matter is operated by the supporting belt for the column to deliver proportionately to the movement of the belt, means for projecting the speckling matter against the dampened face to produce a speckled effect, and means for embedding the speckling matter into the column, substantially as described.

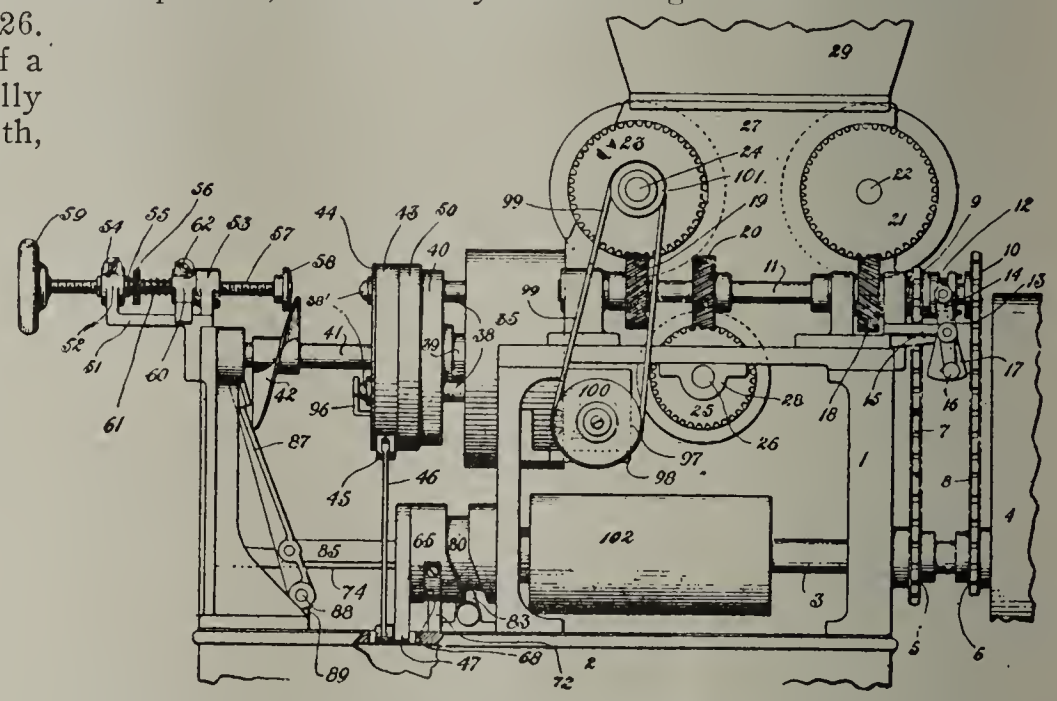
937,644. Kiln. Geremia Pierboni, Connellsville, Pa. Filed Aug. 23, 1907. Serial No. 389,888.



A kiln embodying walls, said walls having air conduits formed therein, channel beams arranged upon the outer sides of said walls, channel bars inclosing the outer sides of said beams and providing water conduits, a water supply tank carried by said kiln, and connecting with said channel bars, said bars having openings formed therein, I-beams embracing said bars, triangular metallic frames bracing said I-beams, and stirrups connecting said frames with said kiln.

938,051. Machine for Dividing Plastic Material into Charges. George E. Gowdy, Belleville, N. J. Filed Mar. 23, 1908. Serial No. 422,612.

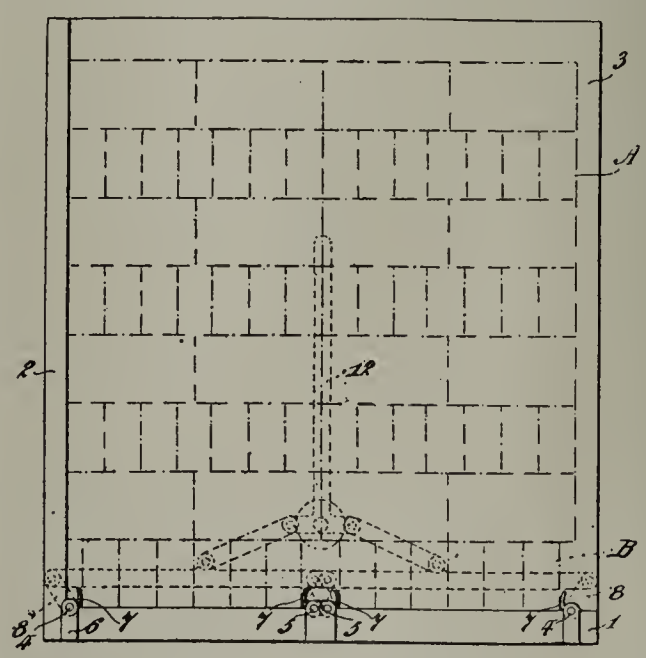
The combination, with a rotary carrier having a series of pockets, of a piston in each pocket; means for feeding material to the pockets; a stop for limiting the stroke of the pistons, and thereby controlling the amount of the



charge in each pocket; a device for intermittingly-rotating the carrier-wheel; and means controlled by each piston at a certain point in the rotation of said carrier-wheel for positively throwing into action mechanism for driving forward the pistons to eject the charges from the pockets.

937,955. Brick-Setting Frame. Raymond C. Penfield, New York, N. Y. Filed Jan. 7, 1909. Serial No. 471,077.

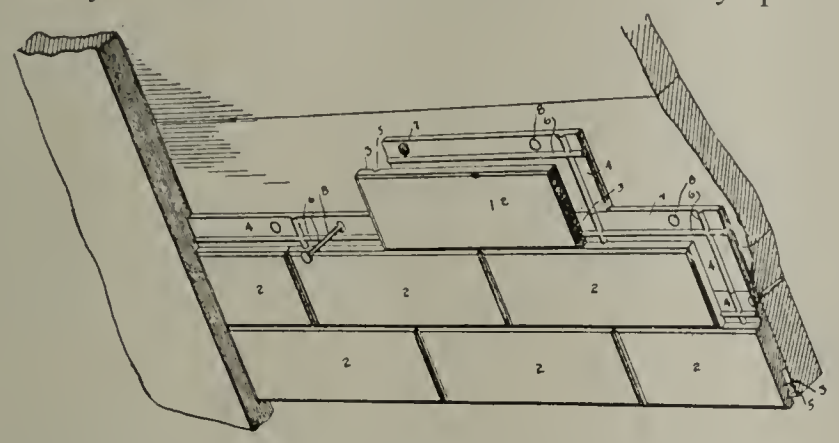
In a brick-setting board, the combination with an angular upright, of a horizontal surface on which the bricks may be hacked up in stack formation, movable devices arranged in connection with the latter for acting upon the lower layer of bricks at the ends and at the center, and a lever for operating said movable devices.



In a brick-setting board, the combination of a base, an angular corner, shafts at the ends of the base provided with clamping devices, shafts at the center likewise provided with clamping devices, a leverage mechanism for rocking said shafts, a handle for actuating the leverage mechanism, all arranged so that the basal row of bricks may be closed up into two closely set sections with spaces at the ends below the superposed mass of a unit stack and a space also between the sections, all arranged so that the basal row thus formed may be susceptible of being engaged by the mechanism of a lifting machine.

938,430. Facing-Brick. James N. McQuern, Canton, Ohio, assignor of one-half to Jacob E. Frailey, Canton, Ohio. Filed Feb. 25, 1909. Serial No. 480,080.

As an improved article of manufacture, a facing brick of the class described, consisting of a body portion, side and end overlapping flanges formed of a thickness substantially one-half the thickness of the body portion,



said flanges provided with ribs and grooves respectively and the ribs adapted to be seated in the grooves of adjacent bricks, substantially as and for the purpose specified.

PACIFIC COAST NEWS ITEMS

While the price of common brick seems to be quite low all along the Coast at the present time the San Francisco market is in a worse shape than any other from the reason that the output of nearby plants have been increased to such an extent that even the heavy consumption that has been noted since the fire is not sufficient to take care of all the brick that are being turned out. With the local market so well supplied brick men are turning their attention to the nearby towns of the state and are now shipping more brick out of this district than ever before, though to interest buyers prices have been cut until they are but little above the cost of production. In the San Francisco market common brick is quoted at $7 per thousand, but only the output of some favored plants is bringing that figure. Much of the common brick now changing hands is being sold for figures approaching $6, and this latter figure more nearly represents the average selling price. Extremely heavy rains have been falling during the past three weeks and many of the plants are now closed for the winter. However, most of them have fair sized stocks of goods on hand and it is the actions of some of the smaller concerns who desire to get rid of their holdings that has caused the decided slump in prices. Prospects were never better in San Francisco for a large consumption of brick as soon as building weather comes on again and it is not anticipated that the present rates will last many months. Mayor-Elect McCarthy has promised to commence an active campaign of rebuilding as soon as he is in office, and it is anticipated that during the next two years there will be a great deal of municipal work done. The mayor-elect is a practical man, president of the Building Trades Council and thoroughly alive to the needs of the city. From the architects' offices comes the news that a great amount of work is being planned at the present time and that brick is being named as a building material for more structures than ever before. Building permits for the month of November were $2,540,897.

Across the bay from San Francisco there is also great activity in the building line promised for next spring. Oakland has greatly increased her territory by taking in a number of suburbs and already plans have been made for some extensive improvements in the line of sewer extentions and sanitary work. The county statician, Henry E. Magill, estimates that during the past year Alameda county has produced brick and terra cotta to the value of $17,025,000.

The Monterey Sandstone Brick Company, formerly of Monterey, California, has decided that Sacramento offers an excellent field and a factory to cost $7,000 and employing an average of 35 men, will be erected there at once. A site for the factory has been purchased at the mouth of the American River where there is an abundance of sand to be had and machinery to cost $40,000 is now being purchased. The company has changed its name and is now known as the Sacramento Sandstone Brick Company. R. N. Philpot, 800 J Street, Sacramento, California, is the secretary of the concern. The plant will enjoy exceptional transportation facilities, being located on a navigable stream and with three railroads at hand.

Work is being rushed on the restoration of the plant of the Carnegie Brick & Pottery Company near Tesla which was so badly wrecked a short time ago by boiler explosions. A battery of eight boilers is to be installed to take the place of the four that were wrecked and other substantial improvements will also be made to increase the capacity of the plant beyond what it formerly was. There was some reserve stock on hand at the time of the accident and the closing down of the plant will not be the cause of many orders being refused.

Within a short time N. Clark & Son, the Oakland manufacturing firm will commence the shipment of pressed brick to Sacramento to be used in facing the new $250,000 Capitol Hotel building. Terra cotta is being shipped at the present time to Salt Lake City and to Tacoma, Washington, and this branch of the firm's business is in a very healthy condition. The new sewer work that is to be done soon in Oakland is expected to tax the capacity of the sewer pipe department, for this firm expects to get a large part of this work.

The Carquinez Brick & Tile Company, operating near San Pablo, is disposing of its products as fast as they can be turned out and is preparing to make some large additions to the plant there before spring.

A new concern to enter the brick manufacturing field at Salt Lake City is the Empire Brick Company. This concern has just been incorporated there with a capital stock of $150,000. W. J. Burton is one of the leading men in the new concern.

The Mulford-Burke Brick Company has been incorporated in Los Angeles with a capital stock of $100,000 by J. K. Burke, S. T. Burke, W. A. Burke, D. L. Burke, E. A. Emmons and H. H. Grossmayer.

A new pottery factory has been started at Los Angeles, California, by J. A. Bauer, a member of the Paducah Pottery, Paducah, Kentucky. He is bringing labor here from the Kentucky plant and expects to turn out some very fine material.

Joseph Simonds, one of the most prominent brick manufacturers of Los Angeles, was married in San Francisco last month to Miss Irene Coulter, a young musician of this place.

W. J. Mitchell has entered the Imperial Valley field and has established a brick plant at Imperial. This is in charge of J. Rathlum and the kilns have a capacity of 200,000 brick.

Large shipments of brick are now being made by the Golden Gate Brick Company from its plant at Antioch to Fruitvale, California, where a contract with the Southern Pacific railroad is being filled.

One of the big plants in the bay district that is still very busy is that of the McNear Brick Company. This concern has a large number of orders on hand and will probably not cease operations at all this winter unless compelled to do so by the inclemency of the weather. Quite an export business is being done and the markets of the bay cities are not being depended upon to absorb the output of the big plant.

CLAY RECORD.

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CLAY RECORD PUBLISHING COMPANY

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GEORGE H. HARTWELL, EDITOR

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"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

CONVENTIONS

The fifth annual convention of the National Paving Brick Manufacturers Association, will be held at Pittsburg, Pa., Feb. 7th, 1910. Secretary W. P. Blair, Indianapolis, Ind.

The twenty-ninth annual convention of the Iowa Brick and Tile Association will be held at Des Moines, Ia., January 11, 12 and 13, 1910. Secretary C. B. Platt. Van Meter, Ia.

The twenty-fourth annual convention of the National Brick Manufacturers Association will be held at Pittsburgh, Pa., February 6 to 12, 1910. Headquarters at Hotel Fort Pitt. Secretary T. A. Randall, Indianapolis, Ind

The twelfth annual convention of the American Ceramic Society will be held at Pittsburgh, Pa., February 6, 7 and 8, 1910. Secretary. Edward Orton, Jr.. Columbus, Ohio.

The thirty.second annual convention of the Illinois Clay Manufacturers Association will be held an Champaign, Ill., January 18, 19 and 20, 1910. Headquarters Hotel Beardsley. Secretary George H. Hartwell, Chicago, Ill.

The National Clay Machinery Association will hold its seventeenth annual meeting in the Fort Pitt Hotel, Pittsburg, Pa., Feb. 8th, 1910. Secretary W. N. Durbin, Anderson, Ind.

The Clay Products Association, of America, will hold its 2nd annual meeting at Pittsburg, Pa., Feb. 8th. Headquarters at Hotel Fort Pitt. Secretary J. Parker B. Fiske, Flatiron Bldg., New York.

The tenth annual convention of the Wisconsin Clay Manufacturers Association will be held at Milwaukee, Wis., February 23-24-25, 1910. Headquarters St. Charles Hotel. Secretary, Samuel Weidman, Madison, Wis.

A Happy and Prosperous New Year to all the readers and friends of the CLAY RECORD.

Many persons are judged by what the majority does not know about them.

It is not what you do, but the way you do it, that makes the difference between the successful and the unsuccessful person.

The man who tries to buy his way into heaven may discover later that he gave up money to an unauthorized representative.

Start right the coming year, advertise your line of goods. No matter if you are selling all you can make, it will be for the general publicity and you will be repaid sooner or later tenfold.

CONDITIONS OF CLAY TRADE IN CHICAGO

Common Brick.

As per the estimate of a year ago there was about 35 per cent more common brick used in the Cook county district this year than in 1908. The total number manufactured was 1,125,000,000 brick. Those sold was 1,150,000,000 and those on hand the first of January will be about 125,000,000. The price averaged about $6 per thousand for the year. The prospects are that there will be 35 to 40 per cent more made in 1910 than in 1909 and that the price will average about $7 which is a fair price for both the consumer and the manufacturer.

Face and Ornamental Brick.

Pressed brick are not manufactured in this county. The selling agencies, which number about ten, have sold a total of 70,000,000 face brick as against 45,000,000 in 1908. The price has been about $2 per thousand higher. The prospects are that there will be 100,000,000 face brick sold in 1910 and at a price a little in advance of 1909 prices.

Fire Brick.

There are no fire clays in Cook county and but one manufacturing plant. The fire brick dealers sold over 25,000,000 fire brick ranging in price from $12 to $170 per thousand, the average being about $20 to $21. At least 4,000,000 to 5,000,000 more fire brick were sold than in 1908 and the prospects are that in 1910 there will be sold at least 45 to 50,000,000 on account of the new coke ovens and the steel plants requiring so many. 8,000,000 will be used by the steel company alone on their new work.

Paving Brick and Blocks.

Paving brick are not made in Cook county. The agencies have sold 35,000,000 which is about 30 per cent over that of last year and at an average price of 90 cents per square yard on the job. It takes 1,000,000 brick for a mile of brick pavement on the average width streets. Prospects are that this figure will be greatly increased and perhaps doubled in 1910. 102 streets are to be laid with vitrified paving brick in 1910.

OBITUARY

Franz Jungk, secretary of the Improved Brick Company, of Salt Lake City, Utah, died suddenly at Portland, Oregon. He was 55 years of age, and unmarried.

Robert H. Adams died at his home 416 East 32d street, Indianapolis, Ind. He was formerly in the brick business and later in the Muncie Gas Company.

Harry Lambert Koenig, aged 65 years, the oldest active potter in the United States, died at Newell, W. Va. He was with the Homer Laughlin China Company for 15 years.

Mike Casey, of Cedar Bayou, Texas, met with instant death by the accidental discharge of a shot gun. Mr. Casey was owner of a brick yard at Cedar Bayou. He leaves a wife and several children.

F. G. Croxall, aged 68 years, a widely known pottery worker, died at his home in East Liverpool, Ohio. Mr. Croxall was a prominent Mason, and a township trustee for 25 years. He had lived in East Liverpool over 50 years.

FIRE! FIRE!! FIRE!!!

The plant of the Pittsburg (Kansas) Vitrified Paving and Building Brick Company was damaged by fire to the extent of $50,000. Fire started in fan house which forces the hot air into the dryer, burning the dryer, the machine house and the engine and boiler room. Insurance, $21,500. The plant will be rebuilt at once. Robert Nesch of Kansas City, Mo., is at the head of the company.

The plant of the Haselton Tile Roofing Company, Youngstown, Ohio, was destroyed by fire, causing a loss of $5,000. The plant was a branch of the Youngstown Car Manufacturing Company.

The plant of the Preston Brick Company, owned by Preston Bros., at North Main St., Hornell, N. Y., was totally destroyed by fire causing a loss of $35,000. Insurance, $18,000. Said to be of incendiary origin.

RAILROADS LOSE TO BRICK MAKERS

Impetus will be given the paving brick industry of Cleveland by the order handed down December 8th, by the Interstate Commerce Commission pronouncing the freight rates from the Central Traffic Association territory to the Atlantic seaboard to be unreasonable and requiring that the railroads shall not hereafter charge more than twenty-one cents a hundred pounds upon brick.

The Interstate Commerce Commission have been a year investigating the complaint of the National Brick Manufacturers' Association, and its report will mean an average reduction of about four cents a hundred pounds upon paving brick and fire-brick, which are the products most affected by the long distance rates. An action was originally started by the Stowe-Fuller Company, of Cleveland, against the Pennsylvania Railway Company, charging discrimination in the rates upon fire clay brick, and contending that a brick should be a brick in the fixing of freight rates. The matter was then taken up by the national association, which includes practically all the manufacturers of paving and fire clay brick in the central and Eastern states.

The new rate with a maximum of twenty-one cents a hundred pounds from points in the Central Traffic territory to points in the trunk line territory of the east, will take effect on February 1 next, and continues for two years.

Cleveland manufacturers think that the railroads will fix the rates upon paving brick, to the territory in question, at a rate less than the maximum, while the higher rate may apply to fire clay brick. The manufacturers of building brick are little affected since they do not ship any quantity of their product out of the Central Traffic Association territory.

ACCIDENTS, DAMAGES AND LOSSES

Misses Mary and Anna Beattie have filed suit against the New Superior Brick Company stockholders to set aside the sale of the old plant to the new company.

W. K. Synder, formerly an employe of the Kankakee (Ill.) Brick & Tile Company, has brought suit for $1,200 damages for the breaking of an ankle while working in the dry kiln.

Will Lewis has filed a $10,000 suit against the Chattanooga River Brick Company, Chattanooga, Tenn., for the falling of a brick wall upon him while at work for the company.

Horace Goheen, night engineer of the Auburn (Pa.) Shale Brick Company's plant, was badly burned by his clothing coming in contact with a torch in a moment he was a sheet of flames.

The referee in bankruptcy of the Yoke Vitrified Brick Company, of Coffeyville, Kansas, called a meeting of the creditors for January 5, at which time the sale of the assets of the company will be considered.

Adam Danforth, the foreman of the St. Anne (Ill.) Brick & Tile Company, lost his left hand in the crushing rolls, while removing some obstruction the engine started with a jerk and caught him in the roll.

George Kalatch, aged 57, a laborer employed on the Rose Brick Yard at Newburgh, N. Y., was instantly killed by being buried in a sand slide. $150 known to be in his pocket before his death suddenly disappeared.

David Hinds and Daniel Abraham were instantly killed and eight other men narrowly escaped death when a boiler at the plant of the Robinson Clay Products Company, near New Philadelphia, Ohio, exploded. 350 men are thrown out of employment.

The receiver of the Central Georgia Brick Company, Macon, Georgia, has obtained authority of the court to sell the property. A $14,000 suit for damages is also being started against them by Mattie B. Butler, claiming that her husband was badly crippled while at work at the plant.

A stockholder of the Wheeland Brick Company, of Mountain View, California, has started action to compel Mrs. Georgia Wheeland and Mrs. Sophia Curtis to deed an eight acre tract of land to the company, which was said to be bought with company money. The two women have controlling interests in the property.

COURTS CLOSED TO CONCERNS NOT LICENSED IN ILLINOIS

Business corporations which are not licensed to do business in Illinois have no rights in the courts of the state, according to the decisions handed down by Judge Holdom in the Appellate court at Chicago. It is considered of far reaching importance to the commercial world.

The first decision was in a suit brought by the Frank Simpson Fruit Company, a corporation organized in Kansas and not licensed to operate in this state, against the Atchison, Topeka & Santa Fe railroad company.

The former sued for damages for negligence in handling a shipment of bananas from New Orleans to Los Angeles. The trial court allowed damages and the railroad appealed on the ground that the fruit concern, being an artificial "person,' created by laws of another state, was a foreign corporation and because of its failure to comply with Illinois statutes, was not entitled to maintain action in the courts here. This contention was upheld by Judge Holdom. Judge Baker dissented, but gave no opinion.

The other rulings were in cases of the Erie and Michigan Railway and Navigation Company against the Central Railway Equipment Company, and of the United States Gypsum Company against the Equipment Company.

AMERICAN POTTERS LIKE NEW TARIFF

William Burgess, first vice-president and executive commissioner of the United States Potters' Association, was in New York and corrected some erroneous impressions caused by press dispatches regarding a recent annual meeting of the organization held in Washington. In the first place, Mr. Burgess, who directs the tariff propaganda of the association, made it plain that the domestic potters are pleased with the provisions of the new tariff in its relation to the American industry.

The association regards section 11 of the new administrative act as especially helpful in forcing importers of foreign goods to invoice their goods at correct values, thereby eliminating a dangerous factor in the competition between domestic and foreign dealers. Another matter the potters intend to deal with the coming year, according to Mr. Burgess, relates to alleged freight discrimination.

"On the whole," said Mr. Burgess, "the convention was one of the most enthusiastic and important meetings ever held by the association. The report of the tariff committee, which was made at length, and in detail, was received with appreciation. The association realized that never had there been a more thoroughly planned and energetically executed attack on the pottery industry by certain importing interests as was made during the formation of the Aldrich-Payne law, and that we, in common with all other manufacturing industries, were so misrepresented that all hands felt like congratulating themselves that results were no worse.

"The potters believe that the new provision in section 11 of the administrative law in relation to consigned goods, and goods not freely sold to all purchasers, will be of great benefit in compelling the payment of, at least, a large proportion of the duties the law provides for. The association is also awake to the fact that plans are already on foot to try and defeat even this provision, and fictitious values are being made abroad with this end in view. The association heartily endorsed the work of the tariff committee and also the work of the special committee on customs matters."

Mr. Burgess is optimistic regarding the outlook for business in 1910, and feels that the potters will have their share of the general prosperity. It may be stated, however, that the domestic potters propose to keep a close watch on the values at which foreign competitive goods are entered the coming year. Mr. Burgess, as executive commissioner, will be in charge of customs as they relate to the business of the domestic pottery industry.

AKRON MAN BUYS CLEVELAND LAND FOR A BIG PLANT

Attorney A. H. Fiebach of Cleveland, Ohio, purchased the property of the National Chemical Company of Cleveland, for H. A. Robinson, of Akron.

It is said that Robinson, backed by Akron and Cleveland men, and eastern capital, will erect on the site one of the largest sewer pipe plants in the world. The property is located about six miles from the Cleveland public square on the Baltimore & Ohio railway and the Lake Erie & Pittsburg railway.

On the property is a shale bank 110 feet high which covers about 25 acres of the land.

Mr. Robinson expects to manufacture various clay products as well as sewer pipe, and is now organizing a company for that purpose.

About $750,000 will be required for the land, buildings and machinery, and the plant, when in operation, will give employment to 700 men.

It is said that the proposed plant has been designed by W. S. Ferguson of the F. P. Construction Company of Cleveland.

HORSEHEADS AND ELMIRA BRICK PLANTS CONSOLIDATE

At a meeting of the stockholders held December 27, it was voted to consolidate the Elmira (N. Y.) Shale Brick Company with the Horseheads Brick Company, whose plant was recently burned in Horseheads. Much other business of an important nature came up at this meeting.

The Horseheads company has settled the differences with the village, in regard to a land proposition and have already started to rebuild that part of the plant which was burned some time ago. After the fire it seemed probable for a time that the brick company would leave Horseheads for the want of desired facilities. Adjoining land was needed to reconstruct the plant according to the new plans and here difficulties arose. This, however, has been settled that the plant would remain in Horesheads and that the repairs are already under way.

The majority of the stock in the Horseheads company is held by R. G. Eisenhart, while Phillip Weyer is at the head of the Elmira company. It was stated that the consolidation is made and that the two plants will continue to work on an independent basis, as both are of extensive proportions and capable of standing alone. The consolidation will simply be a merging of the stock.

It is stated that the Horseheads plant will be equipped with more modern machinery and that when rebuilt it will be ready to do business on an even larger scale than heretofore.

GOOD BRICK STREETS TO COST $550.000

Two hundred and fifty thousand dollars represents the aggregate expenditures on street improvements undertaken by Aberdeen during the 12 months that will end January 1, according to figures compiled by City Engineer C. W. Ewart, Aberdeen, Wash., and $300,000 will probably be spent in like work in 1910.

The city has 10,000 square yards of brick paved streets; 10,000 square yards of asphalt pavement; seven miles of graveled streets and 23 miles of planked streets. For the coming year the council has practically awarded contracts for 25,000 square yards of additional pavements.

Since the engineer will not make his report until the close of the fiscal year in May, 1910, it is impossible to segregate exact contracts for 1909, yet it is safe to say that at least the amount stated has gone into street improvements during the year.

While the Heron street improvement, which cost $56,000 in round numbers, was started prior to January 1, 1909, it was not finished until late in June of the past year. This street was paved with vitrified brick and was the first permanent improvement job undertaken by the city and practically marked a new era in Aberdeen. It cost $70,000 to make the Wishkah street improvement. The H street improvement, from River street to Market, cost $34,000. Ten thousand dollars was paid for the Broadway fill and improvement from Heron to First street, and $35,000 for the improvement of Third, Fourth, L and Sixth streets on Broadway hill.

SOLD 7,000,000 AND WILL INCREASE CAPACITY

It is reported that the newly erected plant of the Daffney Brick Company at the north end of Mechanicsville, N. Y., will have its working capacity greatly increased by the adding of one more brick machine and another drying shed. It is said that the new company has just received an order for seven million brick and the additional machinery and drying rooms will be added to the present plant in order to give a greater output of brick daily. Thomas J. Tweedy is said to have been awarded the contract for the erection of the new building.

UNPRECEDENTED BUSINESS CAUSES COMPANY TO ENLARGE

Articles of incorporation have been filed with the secretary of state by the Webster City Brick & Tile Company, of Iowa, capitalizing the plant at $100,000, with the following forming the company: G. A. Soule, C. W. Soule, M. S. Carey and John F. Carey.

The unprecedented business enjoyed by this firm during the past year, has demanded that more extensive facilities be made to supply this demand. During the season they were unable to handle near all their orders and the situation made it imperative that changes be made.

On an extensive plan the work has been taken up. Clay sheds, for the handling of clay in winter time, drying rooms, etc., are being constructed. A force of men will be kept busy making these additions through the present winter. The plan is to place the factory in such shape that the wheels can be kept humming the year round, not being necessitated to stop operations for cold weather.

The season's sales have been the biggest the firm has ever enjoyed. They are now 150 cars behind in their orders and the yard practicaly depleted. Never was there such a demand for good tile. Never has the factory been so crowded for their wares. The need of tile in northern Iowa is still in its infancy, and the Webster City tile has created a name that places it among the best to be secured.

THE OUDIN & BERGMAN CASE SETTLED AFTER 12 YEARS

In affirming the judgment of the Spokane (Wash.) Superior Court in the case of F. P. Weymouth, receiver for the Oudin & Bergman Fire Clay Mining & Manufacturing Company, dissolved partnership, and Thomas F. Conlan against Charles P. Oudin and the American Fire Brick Company the supreme court advised an early settlement, as for 12 years the company has been in the courts, and this last makes the 11th appeal to the supreme court.

The defendants win out this time.

When organized the company issued 1500 shares of capital stock, Oudin holding one share and his wife 749 shares and Bergman 750 shares. Oudin was president and Bergman secretary, both being trustees.

Bergman sold out to Conlan, and then at every meeting of the stockholders the Oudin stock was voted for Mrs. Oudin for secretary and Conlan voted for himself, and the business was brought to a standstill. Oudin's brother in New York put up the money for the building of a brick plant near Spokane, with Conlan's consent. The old plant burned down in 1903 and then litigation piled up.

It was claimed that some of the original company's money was used in the construction of the new plant, and that the Oudins should have spent $250 to repair the old plant after the fire. The supreme court says that the Oudins cannot be held responsible, as both parties were stubborn.

FACE BRICK MEN TO HAVE A NATIONAL ASSOCIATION

At the Chittenden hotel in Columbus, Ohio, a largely attended meeting of the Ohio Face Brick Manufacturers' Association was held. The following officers were elected: J. M. Adams, general manager of the Iron-Clay Brick Company of Columbus, president; S. M. Gould, superintendent of the Ohio Mining and Manufacturing Company, Shawnee, vice-president; L. G. Kilbourne, president Columbus Brick and Terra-Cotta Company, treasurer; R. L. Queisser, Cleveland, secretary.

Secretary Queisser was directed to arrange for a meeting of all the face brick manufacturers to meet at the N. B. M. A. Convention and arrange to organize a National Face Brick Manufacturers' Association.

VICTORY FOR OHIO COURTS OVER KANSAS COURTS

A victory has been won in the United States court at Cleveland, Ohio, by the creditors of the Chanute (Kansas) Cement & Clay Product Company, who started an involuntary bankruptcy action against the company in the Cleveland court. The affairs of the Chanute concern have been considerably before the public and a number of Akron people have been interested. Sometime ago a petition in involuntary bankruptcy was begun by creditors of the Chanute Company in the United States district court at Fort Scott, Kansas. Later a petition was filed in Cleveland and the matter referred to the local referee in bankruptcy, Harry L. Snyder for an adjucation. At the first meeting of the creditors Frank B. Burch, of Wilcox, Parsons, Burch & Adams was appointed trustee.

In behalf of the action in which he appears, Mr. Burch raised the point in the Cleveland court that the Fort Scott court had no jurisdiction in the case, that the two cases should consolidate and that the assets of the company be turned over to him. Judge Taylor on December 14 held that the United States court in Kansas has no jurisdiction to act in a petition in bankruptcy for to adjucate the Chanute Company bankrupt. He also enjoined the petitioning creditors in Kansas and all other parties deriving authority under the United States court in Kansas from further proceedings in that court. He further authorized Trustee Frank Burch to institute any proceeding necessary to acquire the property of the company which consists of an office in Akron, various lands in this state, a plant at Chanute, Kansas and Bronson, Michigan. The property at Chanute and Bronson have hitherto been in the hands of the representatives of the western court.

FULLER & JOHNSON RECEIVING MANY COMPLIMENTS ON WONDERFUL PUMPING OUTFIT

Fuller & Johnson, Madison, Wis., are in receipt of hundreds of letters from users of their Diaphragm Bilge Pump Outfits, expressing whole-hearted satisfaction at the marvelous work of which this truly wonderful outfit is capable.

The pump actually does two men's work at a mere fraction of their pay. It is attracting favorable attention from contractors, builders, railroads, ship and barge owners, or public works. Wherever economy of time and money are important factors this mechanical marvel is destined to play a very important part.

The only attention required by this engine is that of feeding it the necessary gasoline and lubricating oil. It can be operated at about 2c an hour and runs for long periods with scarcely any up-keep. Those who have tested it say that it quickly pays for itself.

Contractors who must raise large quantities of water in the course of their work will do well to investigate this new type of engine.

NEW JERSEY BRICK ADVANCED $1.00 PER THOUSAND

Brickmakers of Trenton, Bordentown, Kinkora and vicinity met at Trenton, New Jersey, and decided upon a general increase in the price of brick. The advance made is $1 a thousand on all grades of common brick.

The new prices to be quoted are as follows: Salmon brick, $7 a thousand; rough hard brick, $8 a thousand; straight hard brick, $9 a thousand.

The increase takes effect immediately except on contracts already made and now pending. Orders for those will, of course, be filled at the old prices.

BRICK GAINING IN POPULARITY IN INDIANAPOLIS

According to the predictions of some of the best architects in Indianapolis, the coming season of building will mark a new era in the construction of homes, or, at least emphasize an era that was started in the season just closed. That is, the most substantial and artistic houses will be built of brick. It is not necessary now to resort to paint and frail frame trimmings to make the house of today attractive.

Brick has always been the standard of perfect construction, making as they do, the best foundation, the dryest wall and reducing the fire risk, items of considerable importance to the builder.

In addition to these most important advantages the brick maker of today has added the much-to-be-desired quality of beauty. Today brick can be found in the oldest homes in the city, and in the new homes now in the course of construction—they are found in the four room cottage and in the mansion. In some houses there are the brick chimneys only, other the chimneys and foundation of brick, but the present day home with the brick foundation, brick chimney, the outside walls and porches of brick is the most attractive ideal home for comfort and durability.

While the different effects shown in face brick are as numerous almost as the stars, giving us, as they do, such a great variety of colors and surfaces. architects are showing designs for brick houses that are most attractive in style of architecture as well as color schemes. In fact, brick have been brought to a point of perfection and desirability for the outside facing and trimming that is equal to the standard they have always been for the foundation, chimneys, and backing of other surface materials.—Indianapolis Star.

UNITED STATES DISTRICT COURT AFFIRMS BERKS REFEREE

The United States district court affirmed the decision of Referee Bertolet, in the matter of the claim of Robert Pennington, receiver of the United States Brick Company, for $265,000 with interest against the Montello Brick Works, Reading, Pa., which was rejected by the referee.

The claim including the interest which was almost $40,000, aggregated $304,000, and was for moneys alleged to have been advanced the Montello Brick Works, bankrupt. Referee Bertolet, in an exhaustive opinion disallowed the claim. An appeal was taken to the United States district court, which in denying the appeal, practically settles a question that has been hanging fire for a long time. It is probable that no appeal to a higher court will be made.

The trustee for bondholder had filed a similar claim for the same amount, but this was also disallowed by the referee.

CALENDARS FOR 1910

The G. B. Mentz Company, manufacturers of brick moulds at Wallkill, N. Y., has sent in one of the most unique calendars of the season. It is called "Recess Hours" and brings one back to the country school days.

E. M. Freese & Company, Galion, Ohio, is now sending out their business calendars for 1910. This year it is unusually attractive and very practical, leaving off many of the "frills" that generally are displayed on most calendars. It is of the kind that will find a place in almost any office.

C. K. Williams & Company, Easton, Pa., have sent in as usual their annual calendar. This firm manufacturers the Anchor brand of dry colors and fillers which is so much used by clay manufacturers to get the desired shades and tints to their ware. The calendar is what is known to the trade as the improved memoranda calendar, and can be had by you for the asking.

SERGEANT BLUFFS ENTERPRISE LOSES IN CONTESTS IN BRICK RATES

The state railway commissioners have announced their decision in the famous Haskins case in Sioux City, Ia., in which discrimination was charged in the transportation of brick from various plants by railway companies and which was of vast importance to industries located in the North Riverside suburb of Sioux City. The decision was in favor of the latter.

L. J. Haskins, who operates a brick plant at Sergeant Bluff on the Northwestern railway seven miles below Sioux City and who competes with the three brick plants in North Riverside was the complainant.

In transporting his products to Sioux City the Northwestern line has charged him according to the long distance haul tariff, which is practically a charge of $15 a car load for brick and tile.

The three companies at North Riverside have been shipping their products over the Milwaukee road under switching rates and paying but $3 a car load.

It was in this that Haskins claimed the unfair and unjust discrimination. It raised the question whether the shipments from the North Riverside plants were hauls or switches.

Haskins maintained that the shipments were hauls and should be charged under the distance tariff. He maintained that the trains transporting the products were under the direction of a train dispatcher and were therefore beyond the switching class under the rule of the railway commission. He further claimed that the North Riverside plants were four miles from the switching limits of the Milwaukee road in Sioux City and were therefore out of the switching class.

In this, however, he was overruled by the commission, which on investigation found that all transporting from the North Riverside plants was done by purely switching trains and crews, and that the dispatcher had charge of the trains only as a matter of safety by reason of the dangerous track, the precipitous bluffs and other conditions which made the operation of the road hazardous. It was purely a switch, the commission held, and the $3 rate was fair and reasonable.

In Haskins' case against the Northwestern the commission found there was no foundation. He is seven miles from Sioux City at a regular station on the Northwestern line, where a station is maintained and trains run under direction of the regular dispatcher. His products are transported by regular trains and never by switching crews. He is unquestionably under the ten mile tariff, the commission held, and the rates charged by the Northwestern are just.

The decision was a victory for the North Riverside companies.

WILL LAY TEN MILLION BRICK

Ten million brick will be laid in the walls or additions to existing manufacturing plants or new plants in Rockford, Illinois, during 1910, according to estimates of men who know what is going on in this city in a commercial way.

One coterie of men who have had a forty acre tract in hand for factory sites now has only fifteen acres available. Other land in the vicinity is being looked after in the same way.

One concern has ordered two and a half million brick a quarter of the quantity mentioned above as a probability for the season. One plant here has had an increase of fifty-three per cent in its business the past year and in spite of successive enlargements will not be able to look after all the orders sent in the coming season.

POTTERY NEWS ITEMS

The Spokane Pottery Company will sell all its property at the main office in Clayton, Wash., January 15, as per order of the court. The assets are estimated at $50,000.

The Trenton Potteries Company will build a four story warehouse at the Equitable Pottery in Trenton, N. J., the contract being awarded to Burton & Burton, at $18,000.

Arthur Kendrick, manager of the mold and mold making department of the Steubenville (Ohio) Pottery, has resigned to engage in another business. He is succeeded by Ernest Goodwin, of East Liverpool.

The Chicago Glass and China Company, capital stock $25,000, has been incorporated. Incorporators are H. J. Rosenberg, N. Galta and H. J. Lurie.

The Commercial Club of El Reno, Okla. has succeeded in securing a pottery manufacturing concern to locate there. They will use the buildings and site of the parties that were to start there some time ago, but were obliged to abandon the undertaking on account of the financial panic.

POTTERY COMBINE STARTED AND ELECTS OFFICERS

Frank Ransbottom, treasurer and general manager of the Eastern Stoneware Company, the new company formed by the merging of all the principal stoneware interests in the eastern district of the country, has returned from Pittsburg, where he attended a meeting of the interested parties.

The officers of the company are C. W. Stine of White Cottage, O., president; Wilson Winters of Crooksville, vice-president; E. L. Taylor of Crooksville, secretary; Frank Ransbottom of Roseville, treasurer and general sales-manager.

All of the sales of the manufactories represented in the merger will be handled through the offices in the Masonic temple, Zanesville, Ohio. About forty traveling men will work from the Zanesville office.

Mr. Ransbottom will be assisted in these new offices by a corps of competent assistants. The offices were opened January 1.

The following manufactories are interested in the merger: Ransbottom Bros. of Roseville, Burley-Winters Pottery Company, A. E. Hull Pottery Company, Keystone Pottery Company, Star Stoneware Company and the Crooksville Pottery Company, all of Crooksville; C. W. Stine Pottery Company of White Cottage, Logan Pottery Company of Logan, Ohio, and other plants at Akron and New Brighton, Pennsylvania.

FIRE BRICK COMPANY FILLING BIG ORDERS

The United Fire Brick Company of Pittsburg, is operating its three plants at Uniontown, Pa., to capacity and filling contracts for the following improvements:

Tower Hill Coke Company, 200 ovens; Jamison Coal and Coke Company, Greensburg, 100 ovens; Pittsburg and Buffalo Coal Company, Marianna, Pa., 75 ovens; Mt. Pleasant Coke Company, Mt. Pleasant, Pa., 50 ovens; Colonial Iron Company, Riddlesburg, Pa., 30 ovens, and the West Penn Steel Company, Brackenridge, Pa., furnaces and other construction work.

SAND OR LIME, BRICK OR BLOCK NEWS

The Sibley Brick Company, Sibley, Mich., had a banner year in 1909 and doubled its capacity.

The Saginaw (Mich.) Sandstone Brick Company are running a double shift, turning out nearly 45,000 brick daily.

The Flint Sandstone Brick Company were obliged to double the capacity of their plant so as to keep up with the orders.

The Federal Cement Tile Company has completed its new plant at Hammond, Ind., and is moving its machinery to the new location.

At Sebewaing, Mich. the Sebewaing Sandstone Brick Company were forced to double the capacity of their plant so as to take care of their growing trade.

The Spencerville (Ohio) Tile Company has developed into a reality. They are now turning out cement tile and will soon install a cement shingle machine.

The City Tile & Cement Company, La Crosse, Wis., will spread out and manufacture cement brick. Alderman F. L. Goddard has become a member of the company.

The Fremont (Neb.) Granite Brick Company have their new plant rebuilt. It is of brick and stone, steam heated and can be operated the year around, making 20,000 brick daily. A. M. Baugh is the superintendent.

The Buffalo (N. Y.) Sandlime Brick Company manufactured four times the amount of sandlime brick in 1909 that they did in 1908 and sold the entire output. Buffalo alone taking 10,000,000. The plant is at Lancaster, N. Y.

The Winchester (Ky.) Granite Brick Company reports that they are running their factory full time, making 19,000 brick daily and shipping them out just as fast as made. J. Harry Allen is secretary and treasurer of the company.

The Grande Brick Company, Grand Rapids, Mich., is running day and night, turning out 44,000 brick daily, with but a single press. They started in May and found it necessary to put on a night crew in order to handle the business.

The Range Brick Company, Hibbing, Minn., filed certificate of incorporation this month with $100,000 capital stock. C. A. Remington, of Hibbing, is president; H. S. Lord, of Carlton, vice-president; and John Kee, of Minneapolis, treasurer.

CROOKSVILLE IS BOOMING

Crooksville, Ohio, the metropolis of Perry county, is at present enjoying one of the biggest booms in its history, due to the unusually prosperous industrial conditions and the recent discovery of an unlimited supply of natural gas within the city limits.

At a meeting of the council a twenty-year franchise was granted to the Crooksville Gas & Oil Company, permitting it to furnish gas both for factory and private use at a rate of ten cents per thousand cubic feet for the former and twenty cents for the latter. The company has one well, which is producing over 3,000,000 cubic feet of gas per day, and a portion of this supply is being used by the Crooksville China Company, the Keystone Pottery and the Burley & Winters Pottery. The company will continue developing its territory as rapidly as possible and expects to drill at least three more wells before spring.

Haigh's New System of Continuous Kiln Arranged to Suit all Locations

These Kilns can be seen burning Roofing Tile, Drain Tile, Dry Pressed Facing, Fire, Paving and Common Building Brick

Points of Superiority: Cheapness in construction. Easy to understaud and operate. Perfectly free from any nuisance. Will save more than one-half of the fuel used on other Kilns. Specially adapted for Utilizing Waste Heat for Drying Purposes, and which is being done most successfully

Address, H. HAIGH, Catskill, N. Y.

MISCELLANEOUS ITEMS

The Cleveland (Ohio) Material Company has been incorporated with $20,000 capital stock by H. J. Collins and others.

Frank Swank is figuring on building a brick plant on his farm near Altoona, Kansas, as soon as Harding's railroad is completed.

The Alumina Shale Brick Company, Bradford, Pa., has increased their capital stock from $50,000 to $100,000, and will increase the capacity of their works.

Burham Bros. stopped making brick at their plant in Montague City, Mass. the first of the month, making 1,000,000 brick each month. They have had a splendid trade this year.

Work on the plant for the Dresden (Ohio) Sewer Pipe Company has been started after tests of the clay being made. About 50 men will be employed and Chicago parties are interested.

Actual work on the new terra cotta plant at Maurer, N. J., is expected to be started by the Federal Terra Cotta Company. The plant is expected to be in operation with six kilns by April.

Coffeyville (Kansas) promoters have signed contracts with eastern capitalists whereby the town of South Coffeyville, Okla., is to have a large terra cotta and brick plant. Etchen Bros. are interested.

D. P. Thomas, receiver of the Fort Scott (Kansas) Brick Company, has an order from the court to borrow $10,000 so as to make the necessary repairs and start the plant. This will be done as soon as the weather permits.

The Muskogee (Okla.) Vitrified Brick Company are making plans to greatly increase the capacity of their plant so as to keep up with the demands for their goods. The present capacity is 50,000 and 150,000 is expected to be made after the enlargements.

A number of El Paso, Texas, business men, including James Clifford, G. W. Emerson, and some local contractors, have purchased 160 acres of shale land at the base of the Muleras Mountain peak, opposite the smelter and will build a modern and up-to-date brick manufacturing plant.

The El Paso (Texas) Portland Cement Works which are not as yet completed, have decided to put in an additional $500,000 to increase the capacity of the plant on account of the business prospects. Earl Leonardt, of Los Angeles, Cal., is at the head of the company.

The J. B. Sewell Brick Factory & Trading Company, Ltd., has been organized at Baldwin, La., to take over the Dr. J. B. Sewell plant which was badly destroyed by a storm in September. F. C. Vigurie is president; Adolph Parro, vice-president; J. D. Morris, secretary and treasurer. The new company will commence business at once.

S. W. Gooch and M. A. Harris will establish a brick factory at Selmer, Tenn.

J. F. Dupree has been awarded the contract to erect the plant for the Rome (Ga.) Brick Company.

J. E. Minter, Mercer Morris and R. B. Small of Macon, Ga., are organizing a $50,000 stock company for the manufacture of sewer pipe.

The Claytonia Brick & Clay Products Company plant at Evansville, Ind., has been sold to A. W. Funkhouser for $5,350. The company will be reorganized and plant enlarged.

The Fredonia (Kansas) Brick Company will close down the first of the year and will make a general overhauling of the machinery and install some new machinery, also a boiler and engine.

The Drake (Ill.) Clay Company has purchased an 80 acre tract of land along the C. & A. Ry., besides the 80 acres purchased from Mr. Doyle, and is ready to do business. The company is capitalized at $100,000.

The Crawfordsville (Ind.) Shale Brick Company paid a 10 per cent dividend and elected the following officers for 1910: James E. Evans, president; J. A. Gilbert, vice-president; G. B. Luckett, secretary and treasurer; and John Ferguson, superintendent of works.

The Atchison (Kansas) Brick, Tile & Coal Company recently elected the following officers: S. R. Bebee, president; W. B. Collett, vice-president; and W. P. Wagginer, secretary and treasurer. The coal property was taken from the receiver's hands and stock sold, the receipts of which are to be used for the erection of a brick and tile plant.

Henry Jenkinson, representing capitalists who are interested in brick at South River and Perth Amboy, N. J., has been in Plainfield, N. J., for several weeks securing options on Cushing Road with a view of establishing a brick plant that will make 25,000,000 brick annually. Hydraulic pumps will be used to keep the water from the pits.

NOTICE

The Trade Mark

TAPESTRY

is registered in the U. S. Patent Office and is our exclusive property It brands our best burned clay products. All manufacturers and dealers, except those selling our goods, are warned against infringement.

Boston **FISKE & CO., Inc.,** New York

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FOR

BANK SAND
GLASS SAND
ROCK, CLAY
COAL, ETC.

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue W. C.

AMERICAN PROCESS CO.,
68 William St. NEW YORK CITY

The Electric City Brick Company has been granted a charter with $25,000 capital stock at Augusta, Ga.

The Lehigh (Ia.) Sewer Pipe & Tile Company has begun the enlargment of its plant to double its present capacity.

There are seventy-five brick making plants in Oklahoma and not one that can manufacture brick fast enough to take care of its orders.

John Bond, a brick maker of Spokane, Wash., has been at Tekoa, Wash., looking over the field with a view of starting a brick works.

The Peerless Brick Company, Seattle Wash., has been incorporated with $6,000 capital stock by O. L. Chapman and R. O. Howard.

Beal Bros., Scottsville, Va., will develop the silica deposits found on their lands, putting in a milling plant, also will erect a plant to make silica brick.

The Barnes Brick Company plant located at Bolesville, Pa., have sold their partly destroyed by fire brick plant to the Pennsylvania railway, to be dismantled, so as to use the site for track purposes.

The Jamestown (N. Y.) Shale Brick Company has built a continuous kiln 1400 feet around same, and that can burn 20,000 brick a month. The stack is 185 feet high. They are also building a bridge across the river and making other improvements.

The New York Roofing Tile Company, Saugerties, N. Y., whose plant was recently destroyed by fire, has had plans drawn for the construction of a modern plant of much larger size. Lucius Washburn, of Albany, is president of the company.

The Holt & Gregg Company is making great improvements to its brick plant, two miles north of Anderson, Cal. A new continuous kiln with 14 chambers holding 24,000 brick each is to be built. J. N. Gregg and James H. Holt laid out the work which is now under way.

The Stiles & Reynolds Brick Company, New Haven, Conn., has been incorporated with $75,000 capital stock. Incorporators are F. L. Stiles and J. F. Reynolds of North Haven, and E. G. Stoddard, of New Haven. The company will take over the W. L. Davis plant at Berlin.

The Nelson Construction Company, of Mason City, Iowa. have 150 laborers and 20 teams at work putting in the foundations for the buildings of the Minnesota Farmers Brick & Tile Company's plant at Austin, Minn. The plant will be finished May 1st, and will make 100,000 6-inch tile each day.

Wellington, Kansas, expects to soon boast of a 25,000 brick making plant. The Rock Island road has recently purchased land adjoining the city for this purpose.

H. A. Robinson, of Akron, Ohio, has purchased land at Cleveland on the B. & O. and Lake Erie & Pittsburg Rys., and will build the largest sewer pipe plant in the world.

The New Richmond (Ind.) Tile Works operated by Mr. Lee, has been shut down and he will shortly begin remodeling the plant. New kilns and new machinery will be added.

The Harrigan & Mink Brick Company, Llanwellyn, Pa., has been incorporated with $60,000 capital stock. J. W. Harrigan, 2331 Wharton St., Scranton, Pa., is interested.

C. D. Peet, of Peet Bros., Ithaca, Mich, has purchased the brick and tile factory at Sickles, of J. A. Broadbeck and will improve and operate same after March 1st, 1910.

The four mile ditch at Rockwell City, Ia., was let to the Lehigh Sewer Pipe & Tile Company of Fort Dodge, Ia. Large tile up to 28 inches and all sizes down to 8 inches will be used.

The Audrain Coal Company, near Vandalia, Mo., opened up a fine vein of clay that underlies the coal in their mine and expect to establish a brick plant that will give employment to many men.

Lon. C. Hill has organized a brick manufacturing company at Hartington, Texas, that will make 50,000 brick daily. The machinery has already been purchased and will be installed in January.

Mr. Wilson, owner of the Tipton (Ia.) Brick & Tile Works, gave each of their employes a Christmas basket containing a turkey, cranberries, celery and all the "fixins" for a fine Christmas dinner.

The Alonzo Curtis Brick Company, of Grant Park, Ill., has purchased the Manteno (Ill.) Brick Company, and added it to their string of brick plants. John Hatch will return to Manteno and superintend the plant.

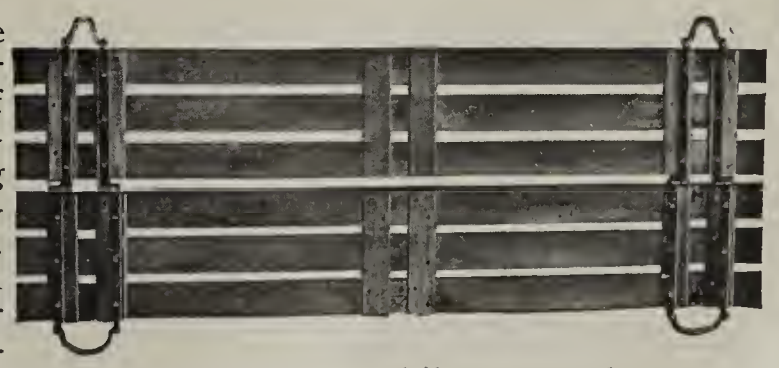
A. G. Yoke, of Brown & Yoke, has sold his interests in the Fort Smith (Ark.) Vitrified Brick Company's plant to parties in Independence and Neodosha, Kansas. Charles Brogue of the latter place will manage the plant.

The Western Brick Machine Company, La Crosse Wis., has been incorporated with $10,000 capital stock. They will make cement brick machines. The incorporators are John Hernker, E. F. Wege and George B. Frederick.

The Ceramic Fuel & Labor Economizing Company has been incorporated with $60,000 capital stock, to do a contracting, engineering and consulting business. Incorporators are Richard Hochne, Charles E. Zollars and Thomas J. Burke.

The Johnston Non-Detachable Folding and Sliding Deck

Is adapted for any style of Dryer Car



The deck can be placed on either side or center of the car for loading or unloading without removing from the car.

The Johnson deck is a labor and material saver, and is especially so when permanent kilns are used.

The Johnson deck can be made of wood, steel or galvanized iron and of malleable iron or drop forgings.

For further information address

CHARLES H. JOHNSTON, 1824 Greenleaf St., Chicago, Ill.

POTTERY MACHINERY WANTED

We are in the market for Machinery for making flower pots, jugs, jars, etc, would buy a small second-hand outfit if reasonable. Address
"FLOWER POT", care of Clay Record,
Chicago Ill.

FOR SALE

One Four Mold Simpson Dry Press
One Fernholtz Pulverizer.
One 40 h. p. Engine and Boiler. Also shafting, pulleys, etc. Have extra mold box for dry press. Will sell all or any part of this machinery.
ED SHANNON,
Shellsburg, Iowa

Second-Hand Brick Machinery For Sale

1 two-mold brick press.
1 three-mold brick press.
1 six-mold brick press.
1 42-inch clay pulverizer.
1 Freese stiff-mud auger machine, pug mill and cutter.
1 Centennial auger machine and cutter.
1 clay mixer.
2 small engines.
Let us know your wants.
Scott Manufacturing Company,
1811 Third National Bank Bldg St. Louis, Mo.

POTTERY MANAGER WANTED

A man is wanted who is capable to equip and manage a pottery factory. Write
DR. ALEX SCHUTT, Bismark, S. Dak

WANTED

One good copy of the Clay Record, Number 10 Volume 16, to complete files for a ceramic school library. Address ROSS C. PURDY,
Ohio State University,
Columbus, Ohio

FOR SALE

Plans and Rights of Round Down-draft Continuous or Semi-Continuous Kilns. Both types possess new and improved features Address
William Radford,
Phoebus, Va.

FOR SALE

AT A HEAVY SACRIFICE for quick turn one half the stock (total stock $25,0 0) fully paid up, in dry pressed brick plant in Illinois city of 75,000. The plant now running and in good condition, Plenty of clay and plenty of demand. Owner must sell as other business demands his whole attention, Snap for practical brick man. Any terms will be made on reasonable security. Act quick as owner will sell to first reasonable offer. Address "HASTE"
Care of Clay Record, Chicago, Ill.

HAMPTON'S KILNS

Burn 99 Percent Hard Brick and Tile

Old kilns easly changed.
Plans and yard rights cheap.

We Build Kilns and Guarantee Them

PITTSBURG KILN CONSTRUCTION CO.
1317 Montello Av., N. E. Washington, D. C.

BRICK PLANT FOR SALE

Well known and good market in the city of Minneapolis. Plant is running at present. Will sell equipment aud yard including horses. If deal is made quick owner can make brick this fall for spring trade. Address
Minnesota, care Clay Record,
Chicago. Ill.

POSITION WANTED

Sand-lime brick manufacturer, 15 years experience, highest references, wants position as Manager or Superintendent of a sand-lime brick plant. Capable to build a plant, to run it and to make it pay. If you cannot make money now call upon me
Address "SAND-LIME,"
Care of Clay Record, Chicago. Ill.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail. at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio

FOR SALE

Sand-Lime Brick Plant in excellent condition, making granite pressed facing brick and standard grade of sterling quality. On four railroads, close to large markets. good trade, unable to fill orders now. A snap if taken at once. Write us.
Address "506" Care of Clay Record,
Chicago, Ill.

FOR SALE

The Entire Plant of The Powhatan Clay Mfg. Co.

Operating continuosly since 1893 at Clayville, Virginia, manufacturing the universally known Powhatan Front Bricks. The entire plant empracing 800 acres of land, employees' buildings, store, good will, etc., is offered at advantageous terms. Address,
14 North 7th St., Richmond, Va.

POSITION WANTED

A German Expert, 28 years of age, graduate of the Luban Ceramic School with complete knowledge of all branches in brick or clay industry, particularly in building and operating kilns. Speak German, Polish, Slavic and some English, wants a positiou in a Brick Yard or Clayworks.
Address LOUIS ZENKER,
194 4th Street, Passaic, N. J.

FOR SALE CHEAP

Four Mold Ross-Keller Brick Press in good working condition.
CHISHOLM, BOYD & WHITE CO.,
57th & Wallace Sts., Chicago, Ill.

FOR SALE

Two second hand American Clay Machinery Co. No. 2 Automatic Cutters.
One Western Wheel Scraper Co No. 2 Jaw Crusher.
Hydraulic Press Brick Co.,
Brazil Branch,
Brazil, Ind.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio
Address A. B. care Clay Record.
Chicago, Ill.

FOR SALE

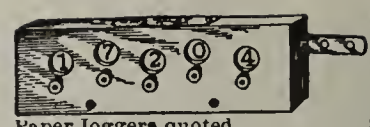
A brick and tile plant in Green County, Iowa. Cannot supply the demand. All new machinery. Good reason for selling. Write for particulars to
GREEN, Care of Clay Record
Chicago, Ill.

WANTED

A young or middle aged man, of habits, strictly good, honest and reliable, one who is experienced in the manufacture of clay products and also able to handle correspondence pertaining thereto, and the use of machinery for the manufacture thereof, for position in sales department of reliable machinery manufacturer. In reply to this advertisement state salary that would be expected and give several references as to ability and character. Address.
Sales Dept. Care of Clay Record,
Chicago, Ill.

LOCATION OR PLANT WANTED

I am looking for a location or preferably a plant partially or ready to run for making clay products such as drain tile builders and pavers, in fact a good shale and fire clay proposition, preferably in Indiana or Illinois, on good road or roads Will buy a managing aud sales managing interest or all if conditions are right. Address
"LOCATION" Care of Clay Record,
Chicago, Ill.



No better made, cut from $8 and $10, to
4 Wheel, $3.00
5 Wheel, $3.25
Guaranteed.
Paper Joggers quoted. Sold by all dealers
R. A. HART, 41 White St., BATTLE CREEK, MICH.

GOOD OPENING FOR CAPITAL AND EXPERIENCE

For the purpose of making enlargements would like to interest capital in clay plant, have dry press and stiff mud outfits, making fire brick, face brick, hollow building tile, fire proofing and common brick. Located in the west and have a great advantage in freight rates over a good market on fire brick, fancy face brick, tile etc. Have immense deposits of high- grade fire clay, several varieties of shale and unlimited quantities of good surface clay. Would prefer to interest parties practical in clay working and will offer good inducements.
A. N. M , Care of Clay Record,
Chicago, Ill.

WANTED

To sell all or a two-thirds interest in an up-to-date Brick Plant and Coal Mines, excellent shale for street block. 12 feet of fire clay. two coal mines, both operated with compressed air machine, with more orders than can be taken care of. An excellent proposition and a money maker, good reason for selling. Manager wants to go South. If interested write to, "BERT" Care of Clay Record
Chicago, Ill.

DRYER CARS

We have on hand a lot of second hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.
The Atlas Car & Mfg. Co.
Cleveland, Ohio

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick.
Address,
FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE

One Form Mold Berg Dry Press. good as new. Made about 200,000 brick. Guarenteed in good working order. Address
BUCKEYE FIRE BRICK & CLAY CO ,
Scioto Furnace, Ohio

CLAY PLANT WANTED

We are in the market for a Brick and Clay Works. one that is located as near to Chicago as possible, State all particulars in first letter.
Address "CLAY PLANT",
Care of Clay Record, Chicago, Ill.

FOR SALE

New Sand Lime Brick Hardening Cylinder, 6 feet diameter by 68 feet long. One removable head. Immediate shipment.
FRANKLIN BOILER WORKS CO.,
Troy, N. Y

PLANT FOR SALE

Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capacity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7.00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles. Cheap fuel and labor; can operate with steam dryer year around. Improvements have cost $16,000, but I am not a brick-maker and to the right party will sell low and easy payments
W. L. JONES,
Lock Box 5, Williamsburg, Va.

Centrifugal Clay Screen

IN OUR NEW CENTRIFUGAL CLAY SCREEN WE HAVE A RADICAL DEPARTure in Clay Screens. The motion is centrifugal instead of vibratory. The life of the machine is thus lengthened and the capacity increased. As the cut shows the screen is made up of two hoppers substantially mounted on a steel frame. The screen plate is circular with large screening surface. It is supported by spiders in a horizontal position. The spiders are keyed to the vertical shaft which is connected to the driving shaft by a pair of bevel gears.

Just beneath the screen plate is a steam coil heater arranged to heat the screen plate to prevent damp clay from clogging p rf rations in the plate.

Surrounding the vertical shaft is a cast iron hopper or spout through which the clay is fed on the screen plate. This hopper can be raised or lowered to regulate the flow of clay on the screen. The hopper being always full of clay keeps an even flow to the screen. The screen as it revoles throws the clay from the center to the outside of the screen plate, the flow being even and regular. The larger particles of clay, too large to pass through the perforations, pass over the screen plate to the outside and fall through the outer housing to a spout conveying them to the grinding pan for regrinding. The fine particles of clay sift through the screen plate into the inner housings or hopper and pass to a conveyor and into a clay bin.

The whole operation is rapid and thorough and the principle insures great capacity and freedom from troubles Many of these screens have been installed and are giving universal satisfaction

In actual operation the No. 147 Screen, which has a screen plate six feet in diameter, is screening equal to the capacity of two nine-foot dry pans. We also build this screen with a four-foot screen which will handle clay to the capacity of one pan. Full particulars as to construction and operation of this screen will be sent upon request

We build every machine and appliance required for the manufacture of every class of clay products by all processes. We are much the largest manufacturers of Clay Working Machinery in the world. Manufacturing as we do every machine and appliance right in our own factories we are better prepared to serve you at a saving in time and money than are others.

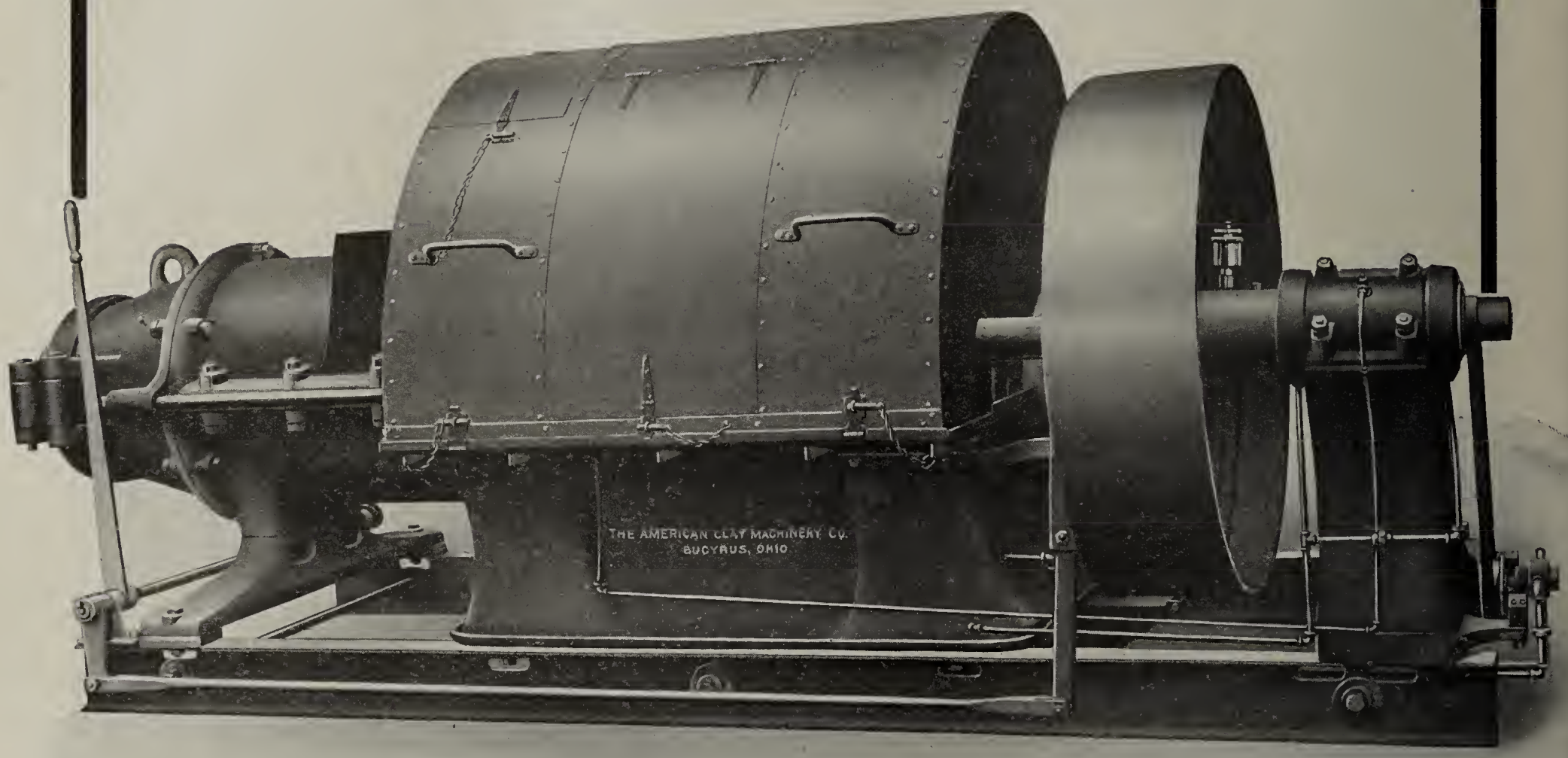
Built Right Run Right

The American Clay Machinery Company

Bucyrus, Ohio, U. S. A.

Built Right Run Right

Force Feed Oiling System for Clay Working Machinery



No. 65 Auger Machine Showing Force Feed Oiling System and Housing

The illustration shows our improved central oiling device for thrust bearings. By this improvement thrusts are oiled from the center instead of trying to get the oil to run from the periphery of the thrust plates to the center. The gravitation on a revolving plate or disc is from the center and not toward it, consequently by the old system there was no assurance that thrust plates received the proper amount of oil. Our new method of applying the oil by force feed to the center of the plates insured plenty of oil and freedom from repairs.

The second illustration shows the No. 65 Auger Brick Machine and Force Feed Oiler housed with a dust proof cover to protect the oiling system and the machine from dust and to protect the workmen. The housing is arranged with hinged doors so that the gearing and the bearings can be inspected at all times. The illustration also shows the No. 65 machine equipped with cut steel gearing. While this is an ideal equipment the oiling system can be applied to standard iron gearing.

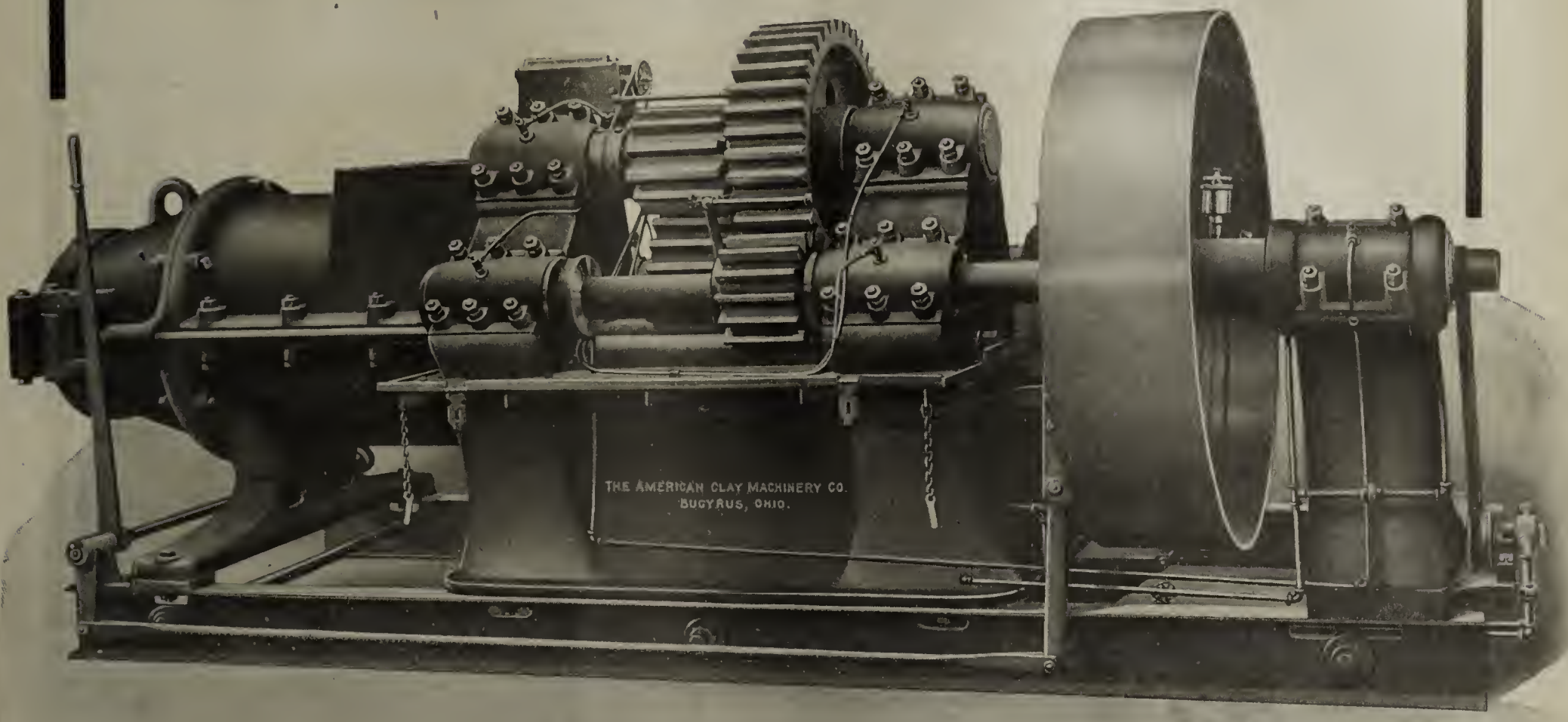
This Force Feed Sight Oiling System can be applied to any of our Clay Working Machines. Correspondence solicited.

We build every machine and appliance needed for making clay products by all processes.

The American Clay Machinery Co.

BUCYRUS, OHIO, U. S. A.

Force Feed Oiling System for Clay Worknig Machinery



No. 65 Auger Machine Showing Force Feed Oiling System, Housing Removed

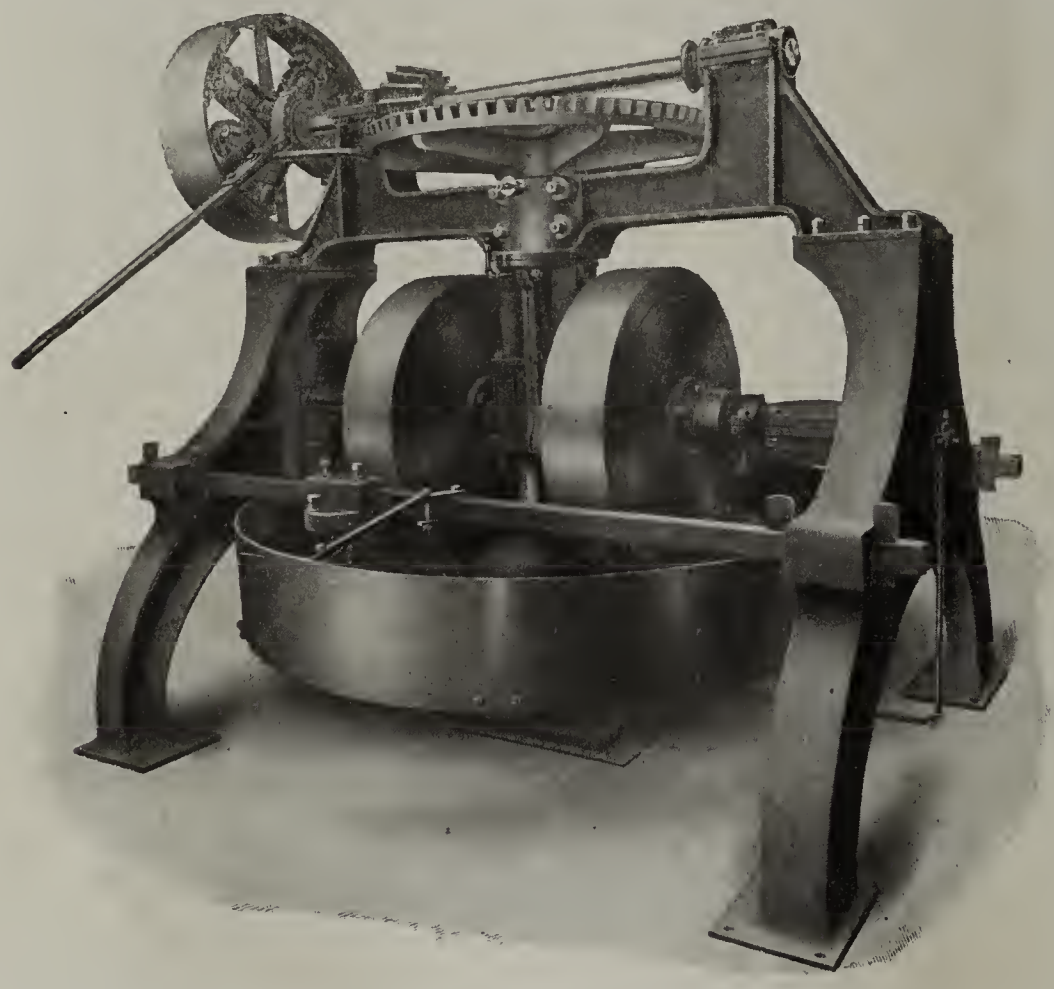
If your engineer persisted in forgetting to oil his engine you would get a new engineer. Our Clay Working Machinery is built as carefully as your engine and is entitled to as careful attention. We have been frequently blamed for inferior machinery when the trouble was entirely due to the failure to oil the machine. Our machinery is "Built Right" and will "Run Right," but it will not continue to run right without oil. In order to insure an adequate supply of oil and at the same time prevent a waste of lubricant, we have brought out a force feed oiling system which is here shown attached to our massive No. 65 Auger Brick Machine. The oiling system consists of a force sight feed pump device driven by either belt or ratchet. Each bearing is connected by a pipe leading from the force pump and each bearing has its individual sight feed so that any one can see that each bearing is receiving the proper amount of oil. A catch pan which is made a part of the base of the Auger Machine receives all drip and the oil thus collected is saved. While this is a source of oil economy it is far more economical in saving bearings and gearings.

The American Clay Machinery Co.

BUCYRUS, OHIO, U. S. A.

Wet and Dry Pans

TO THE EXACTING BUYER OF DRY AND WET PANS OUR LINE APPEALS strongly because of the superiority of design and excellence of material and workmanship all of which are features which are of the greatest importance in the permanent satisfactory operation of pans. The capacity of a pan depends largely upon its design and construction, and the distinctive features embodied in our line of pans have given them a greater capacity than others and have insured more working hours per pan with fewer delays and repairs than can be had from other styles of pans. We have been generous in the design of each pan our lines being the heaviest on the market. This feature should be given special consideration as a lighter weight pan is necessarily much cheaper and should not be compared with our heavy, durable and efficient machines.



The heavy side frames are substantially tied together at the top by the cross beam, in the center by tie bars and also on the floor line. The shafting is large and of steel. The gears are of special design and excellent quality. The bearings are long and well babitted. The mullers are heavy, adjustable and removable. The screen plates are made of special iron. The step is of our approved type and the complete pan is one that can be depended upon under more than ordinary circumstances. All joints are carefully machined and fitted and bolts are made secure by lock-nuts. The vertical shaft and muller shafts are secured by large removable bearings, which make it possible to remove any of these shaftsor the mullers without disturbing the balance of the pan. The gearing is kept to its full efficiency by our device for taking up any possible wear, which insures a perfect mesh of teeth at all times.

For preparing successfully many kinds of fire clay, shale and slate used for paving brick, and for grinding burnt brick or pipe for grout, etc., dry or wet pans are a necessity. The wet pans are particularly adapted for handling material in moist condition, while for use in dry pans it should be practically dry, so that when ground, it will readily pass through the screen plate without clogging.

Write for particulars on our "Divided Screen Plate" which will make a big saving of screen plates. There in no machine required for the manufacture of any clay product which we do not build. Each machine is superior in it's class and of our standard quality.

Built Right Run Right

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Manufacturers of Porous Drain Tile

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All this saving is effected because of the even, steady feeding of the clay to our disintegrator. We have our tracks elevated about 9 feet above your Feeder and Mixer, and we are enabled to dump about 25 car loads of clay in our storage bin over the Feeder, and the Feeder takes care of all this clay without any further attention on our part.

We feel that this is one of the most valuable machines we have in our plant and no one who has ever tried one of your Clay Feeders would go back to the old way. Thanking you for the courtesies shown, we remain

Very truly yours,
SUMMITVILLE DRAIN TILE CO., Per JAMES F. MORRIS, Vice-Pres.

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A TURN OF THE CRANK SAVES 2 MEN'S PAY

THIS wonderful pump does the work of two men, at a small fraction of their wages, and without argument.

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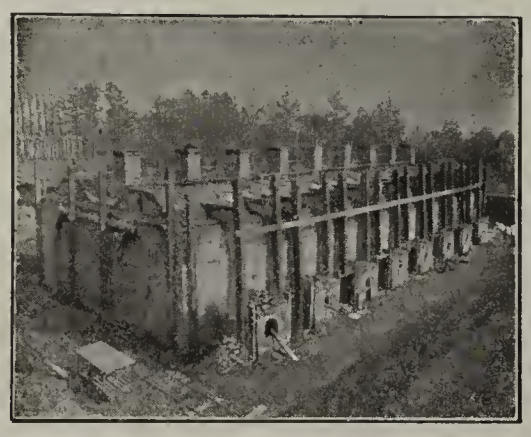

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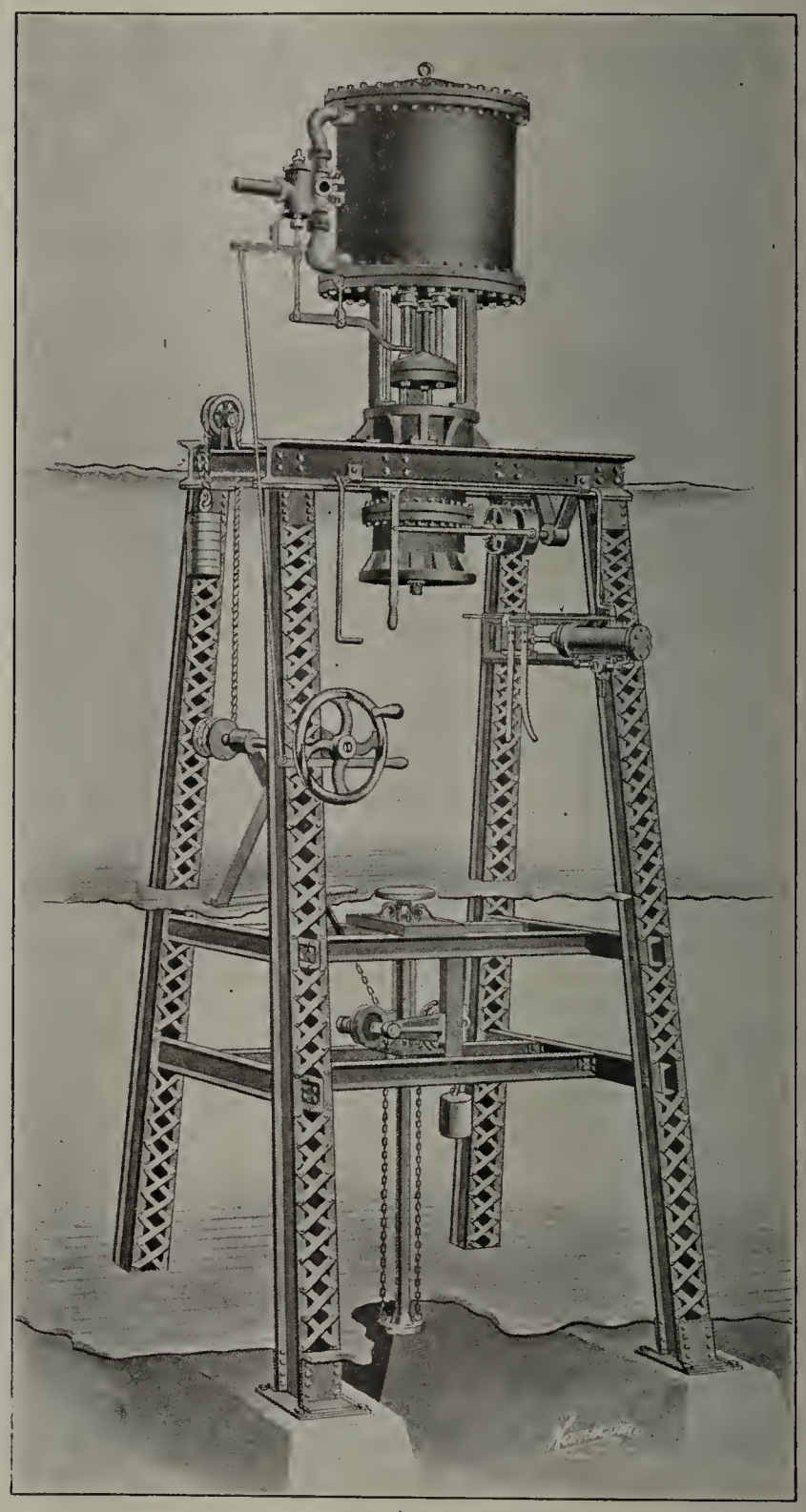

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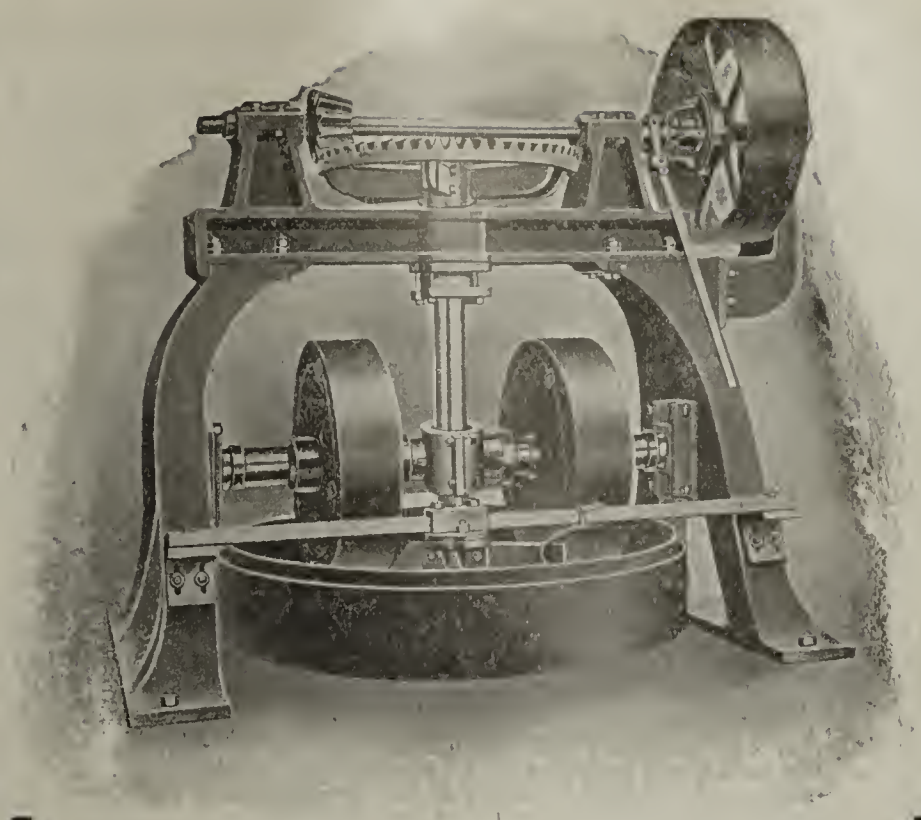

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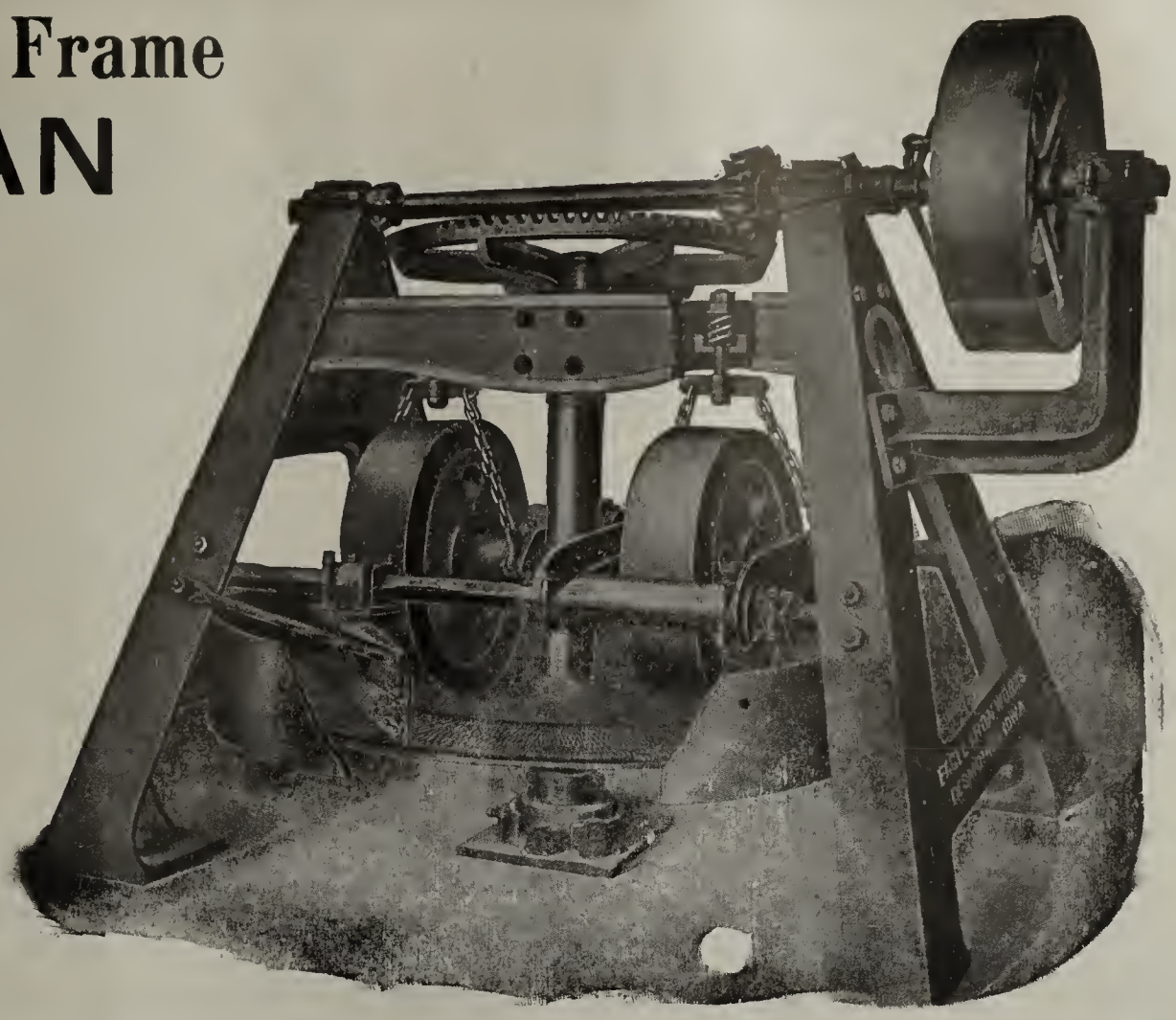

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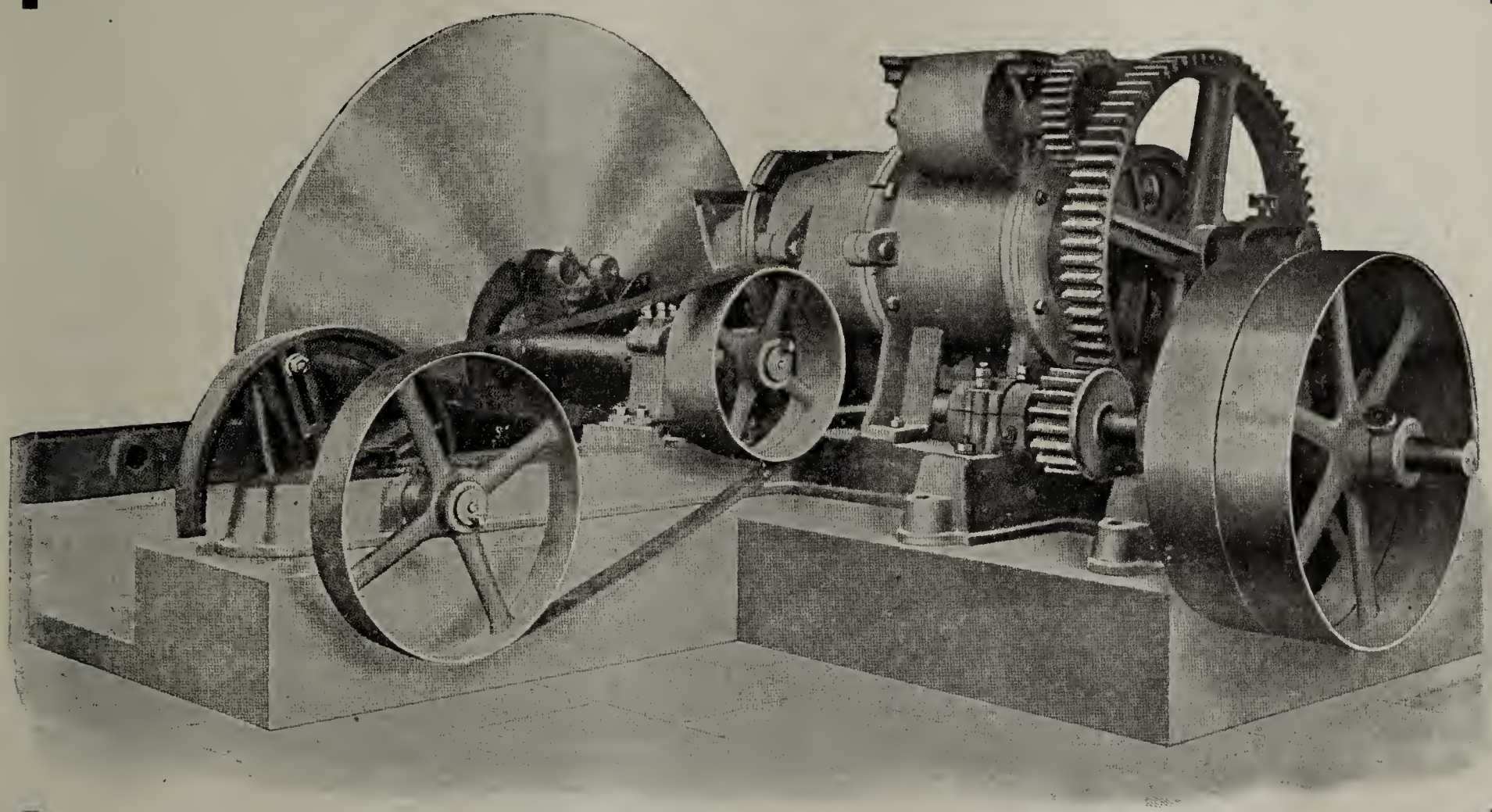
The Diesener Clay Cleanser



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This machine takes out the objectionable matter without necessitating the process of crushing

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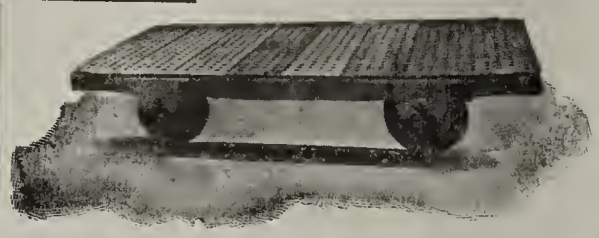

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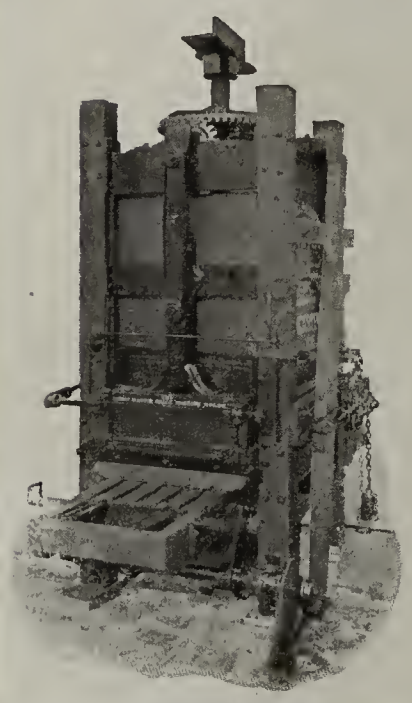

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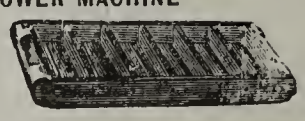

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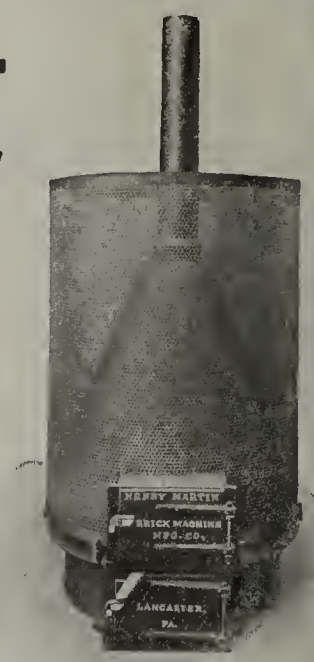

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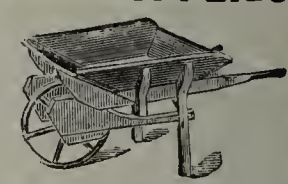

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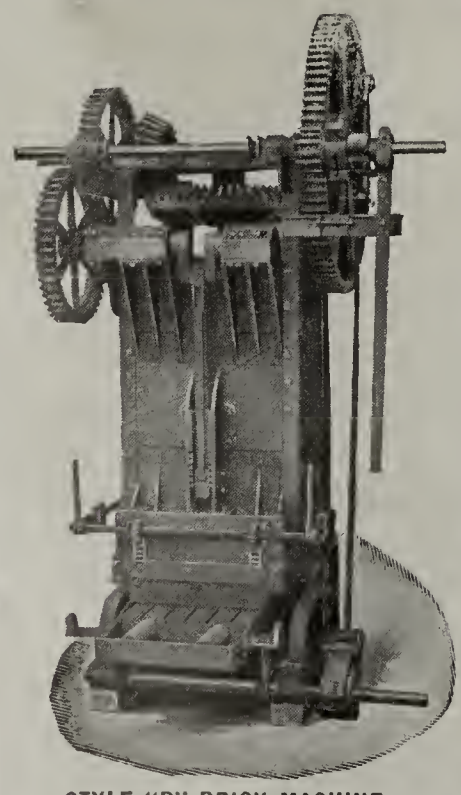
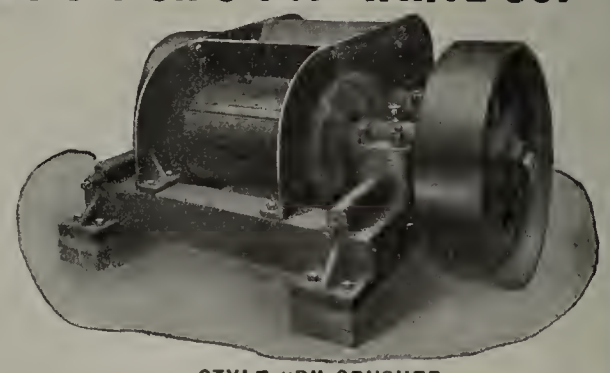


STYLE "P" BRICK MACHINE

"WE FURNISH EVERYTHING THE BRICK-MAKER NEEDS"



STYLE "P" CRUSHER

MARTIN

CLAY-WORKING ENGINEERS & MACHINERY EXPERTS

LANCASTER, PENNA., U. S. A.

THE "MARTIN" STEAM BRICK "DRYING SYSTEM"

PATENTED February, 22d, 1898, No. 599509
October 10, 1905, No. 95520
November 14, 1905, No. 804489
May 26, 1908. No. 888831

This Dryer, and the design in arranging it, are under the protection of the United States Government by virtue of patents granted. Patents have also been taken out in all the principal foreign countries. We are the sole owners and control these important patents and have authorized NO ONE to manufacture or sell the "MARTIN"

RACK PIPE STEAM BRICK DRYERS

☞ YOUR BRICK DRY OVER NIGHT ☜

☞ LABOR SAVING THROUGHOUT ☜

ADAPTED FOR SOFT-MUD OR STIFF-MUD BRICK

SUPERIOR IN EVERY RESPECT TO ANY OTHER SYSTEM—Labor Saving Throughout. Dispenses with Truckers and car Pushers. Pallets Automatically Return to Brick Machine. Quick to install and low in price, and takes up very little Yard room.

The sale and construction of the "Martin" Rack Pipe Steam Brick Dryer is under the direct supervision of the Factory Office at Lancaster, Pa.

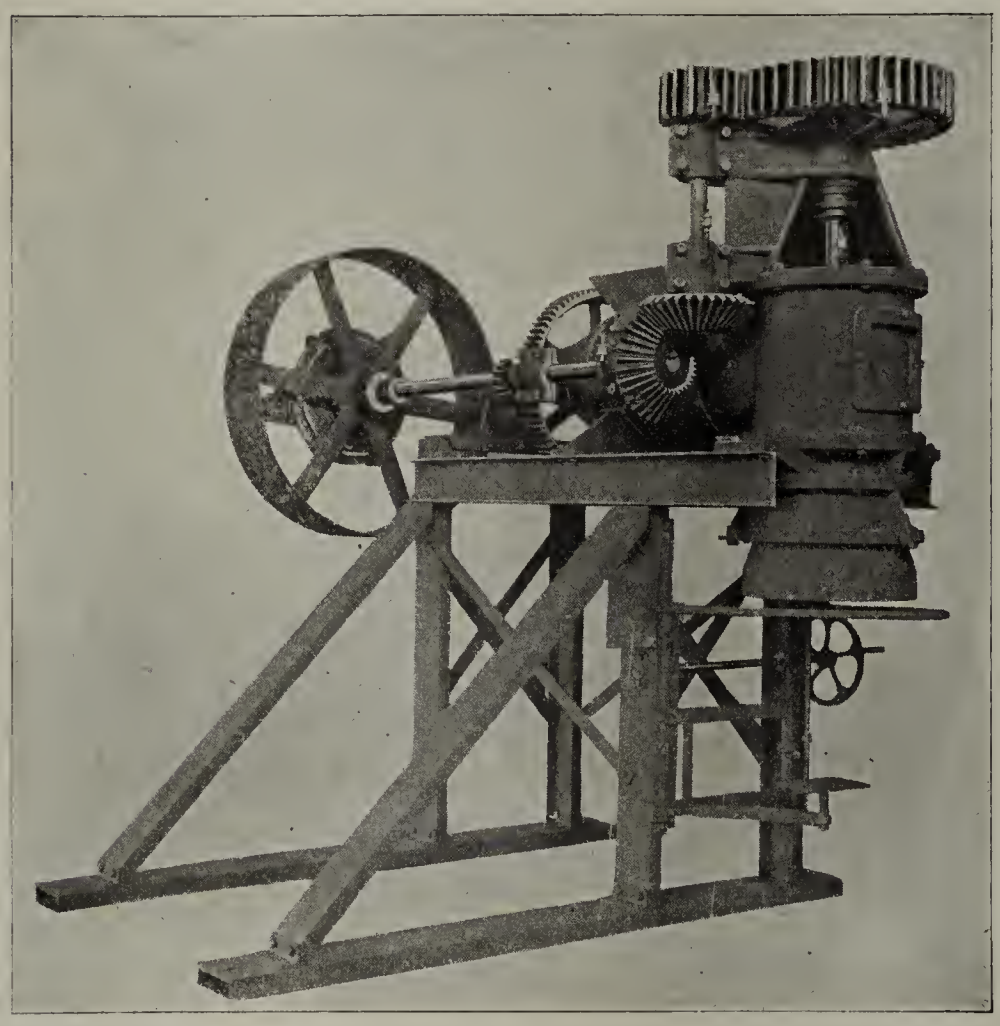
FOR FURTHER INFORMATION, ADDRESS

THE HENRY MARTIN BRICK MACHINE MFG. CO., Inc.

LANCASTER, PA., U. S. A.

Good News For Tile Men

The Big Profits are in the Big Tile



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is the machine you need to keep you in the race.

Tile from 8 inches to 30 inches in Diameter, with dies for the different sizes readily and quickly interchangeable.

Weight of Mill, 8,000 lbs.

Can be furnished without supporting structure for mounting on wooden framework or second-story floor, or will be provided with structural steel supports, easily erected.

ANDERSON FOUNDRY & MACHINE WORKS

ANDERSON, IND.

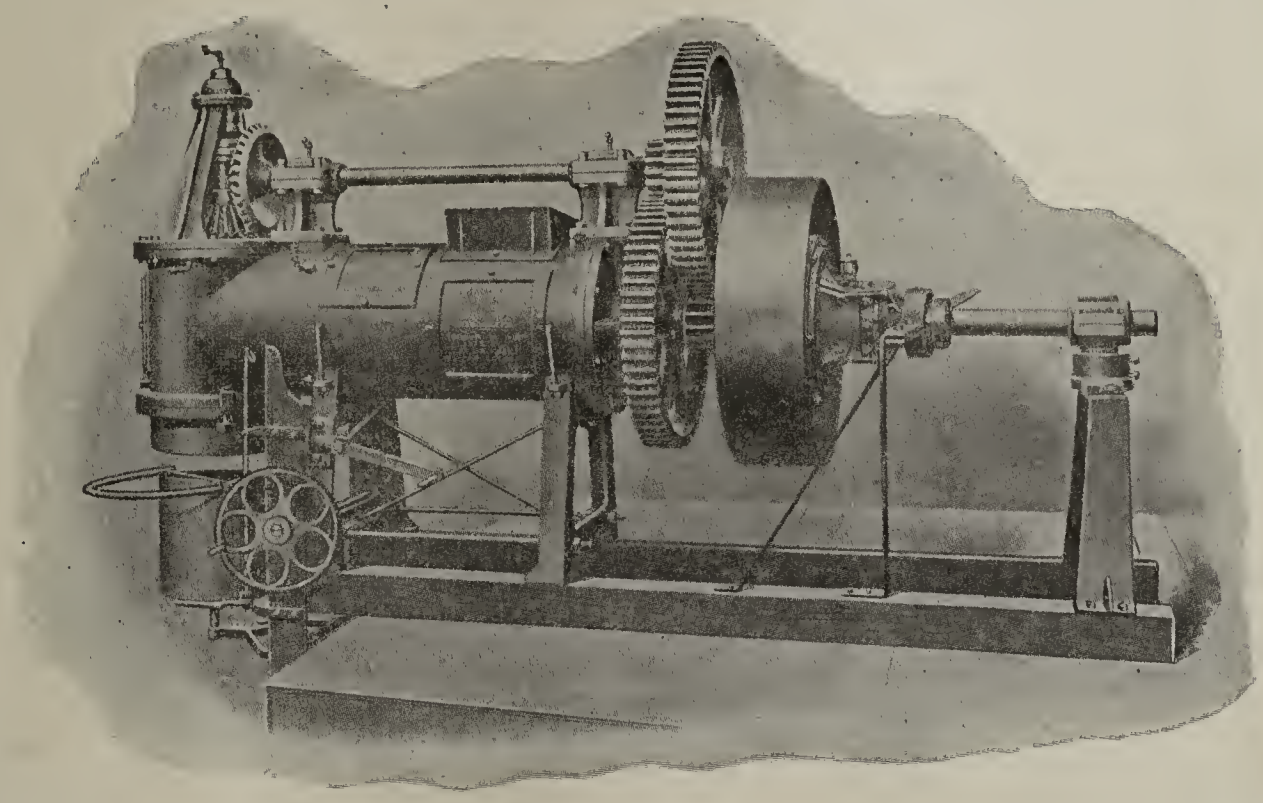
1908 NEW DEPARTURE

The Only Mill for Successfully Making Tile from 3-inch to 24-inch Diameter

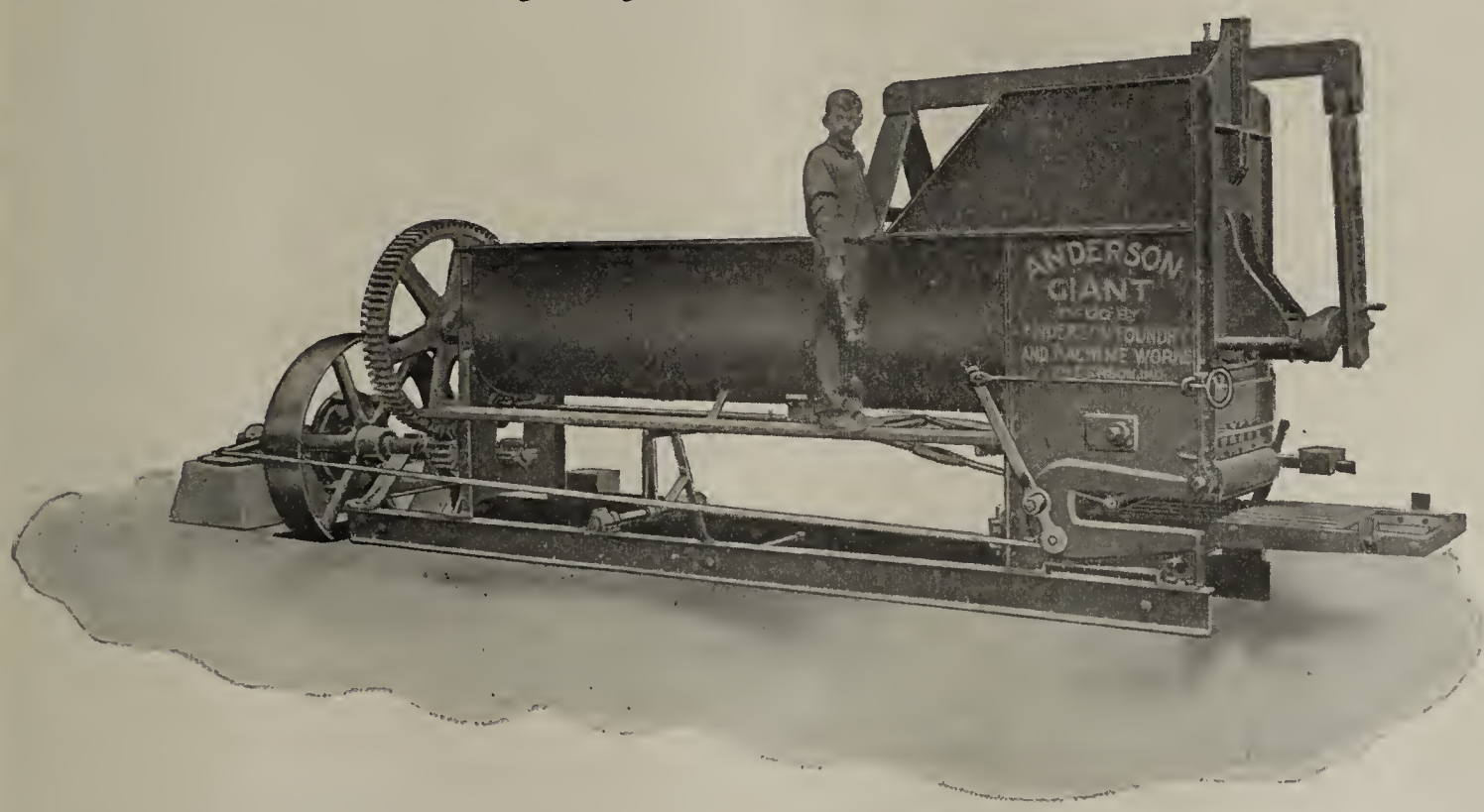
Greatly Improved in Strength and Convenience

Capacity Increased 60 per cent

Power Required to Operate, 40 per cent Less



Our New 1909 Model Anderson Giant



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Dry Press Brick Machinery and Brick Yard Supplies

Write us your needs and let us figure with you.

The

Anderson Foundry & Machine Works

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Electric Side Dump Car.

No. 146
Ball Bearing Turntable. Made in sizes from 4 ft. to 11 ft. in diameter.

No. 181-B
Gable Bottom Dump Car, with trip and brake.

CARS FOR BRICK YARDS, CEMENT WORKS, CONCRETE BLOCK MANUFACTURERS, STONE QUARRIES, ETC.

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Either Side Rocker Dump Car.

TURNTABLES, TRANSFER CARS, DRYER CARS, TRACK, SWITCHES, BRICK PALLETS.

NO. 128
Heavy Double Deck Car
Patent Malleable Iron Uprights.

NO. 142
Transfer Car.

NO. 129
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NO. 277
Steel Mine and Quarry Car.

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